

Surface Warfare

March/April 2000

Our
Maritime
Century

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Our Maritime Century

This year is particularly special for those of us wearing black shoes. No, it's not just the increased pay, the dramatic reductions to the inter-deployment training cycle, or the tremendous operational successes of our ships, which sets this time period apart. It's also much more than planned maintenance workload reductions, SWOCP bonuses and increased duty sections. The most exciting part of the year 2000 is it marks the beginning of our Maritime Century.

I see the excitement of being a Surface Warrior in the 21st century akin to getting in on a hot Initial Public Offering. We're a growth industry, and the value of our stock is going through the roof! Of course, we can't get there from here unless we're always proceeding in-step, with a common vision of the future. This coordination requires an effective communications loop, and all of you are active participants in this loop.

As Director of Surface Warfare, it's my responsibility to communicate our SWO Vision. I'm committed to getting the word out to you and to help you get the word out to others. I don't subscribe to the old adage, "No comms, no comm problems." We need to broadcast our SWO message at every opportunity, whether at the Rotary Club, the high school reunion, or while home on leave. It's OK to brag! I've already mailed a copy of our SWO CD to every commanding officer in the Navy; that includes ships, commissioning sources and shore commands. If your command receives this magazine, your captain got a disk. AOL is not the only one who knows how to do this! I ask you to use this CD to better understand the course our community is steering. There are three files on each disk: N86 Vision, Skills for Life and JO Vision. They are also available for downloading from N86's website at <http://surfacewarfare.navy.mil>. Take a look and tell me what you think. More importantly, share it with other SWOs!

I want to emphasize a few points for you to keep in mind when addressing your audiences. We are a proud community of seafarers, reared through a rich maritime tradition into 21st-century leader warriors. Our highly capable ships, crewed by the finest Sailors, sail far overseas in harm's way to seize control of the sea and shore—anytime, anywhere. Mission accomplishment is always our number one priority.

We embrace and understand our long-term success depends on the professional development of our people. We delegate authority to the lowest level possible; we value our people and prepare them for success. Our Sailors are our most important resources.

Imbued with the "warrior spirit," our commanding officers lead from the front. They insist on the highest professional standards from their people and themselves. Their superiors believe in them and provide generous 4W grid assignments to promote creativity, innovation and resourcefulness in the execution of their duties.

No one can match the quality of our sailors, our firepower, our sustainability and our mobility. The sea is our home and we, its guardians, will enjoy the 21st century, a Maritime Century, dominated by Surface Warfare.



Mike Mullen

Mike Mullen
Rear Admiral, U.S. Navy

Surface Warfare

March/April 2000



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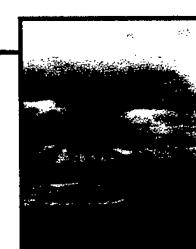
The story of one ship, USS *Camden* (AOE 2), that took the daunting challenge of a CNO docking phase maintenance availability, located 90 minutes away from her home port, head on—saving the Navy over \$2.74 million and improving the quality of life of its sailors in the process. *By LTJG Chris Cooper and CAPT D.A. Loewer*

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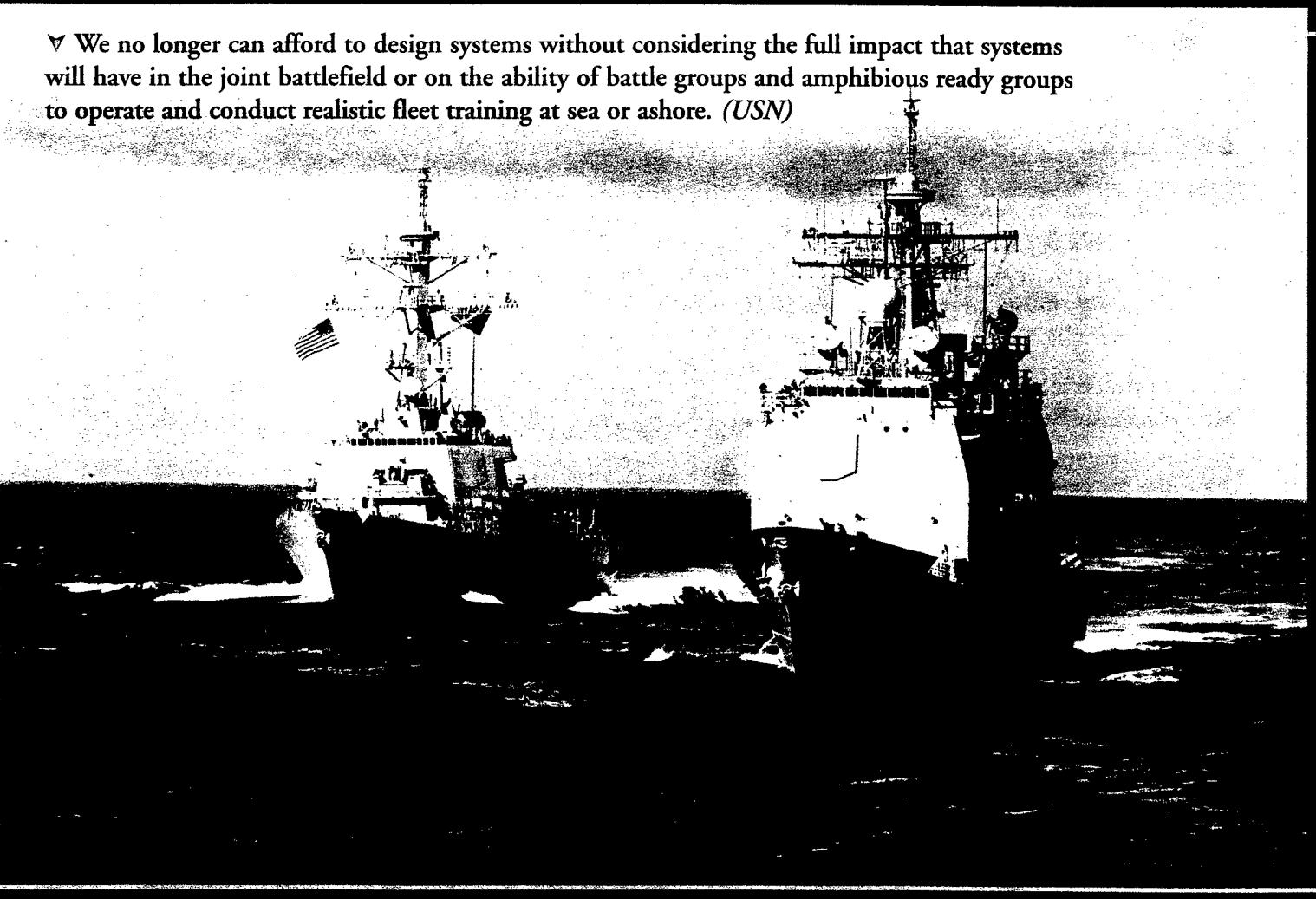
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Surface Warfare Vision

The Surface Navy in the 21st Century

The Surface Navy will be an offensive maritime force. From a foundation of maritime dominance, we will ensure entry into the 21st century joint battlespace through the twin missions of land attack and theater air dominance.

▼ We no longer can afford to design systems without considering the full impact that systems will have in the joint battlefield or on the ability of battle groups and amphibious ready groups to operate and conduct realistic fleet training at sea or ashore. (USN)





◀ We embrace and understand our long-term success depends on the professional development of our people. We delegate authority to the lowest level possible; we value our people and prepare them for success. Our Sailors are our most important resources. (CWO2 Seth Rossman/USN)

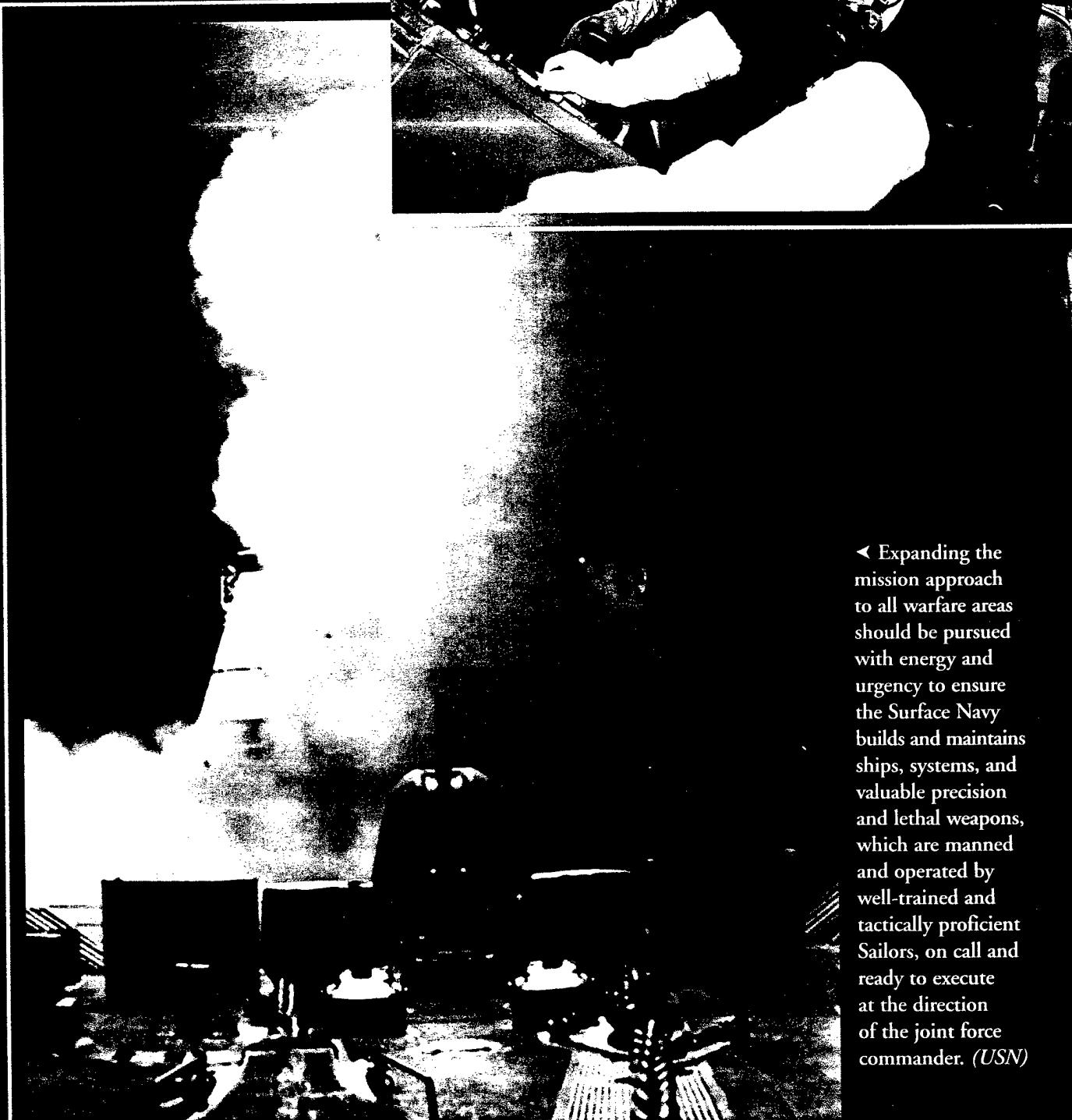


◀ We must examine current combat systems to identify where combat systems development can be frozen without adversely affecting fleet readiness and then focus on resolving interoperability problems and developing common, future combat system capabilities. (USN)

► No one can match the quality of our sailors, our firepower, our sustainability and our mobility. The sea is our home and we, its guardians, will enjoy the 21st century, a Maritime Century, dominated by Surface Warfare. (USN)



► Our highly capable ships, crewed by the finest Sailors, sail far overseas in harm's way to seize control of the sea and shore — anytime, anywhere. Mission accomplishment is always our number one priority.

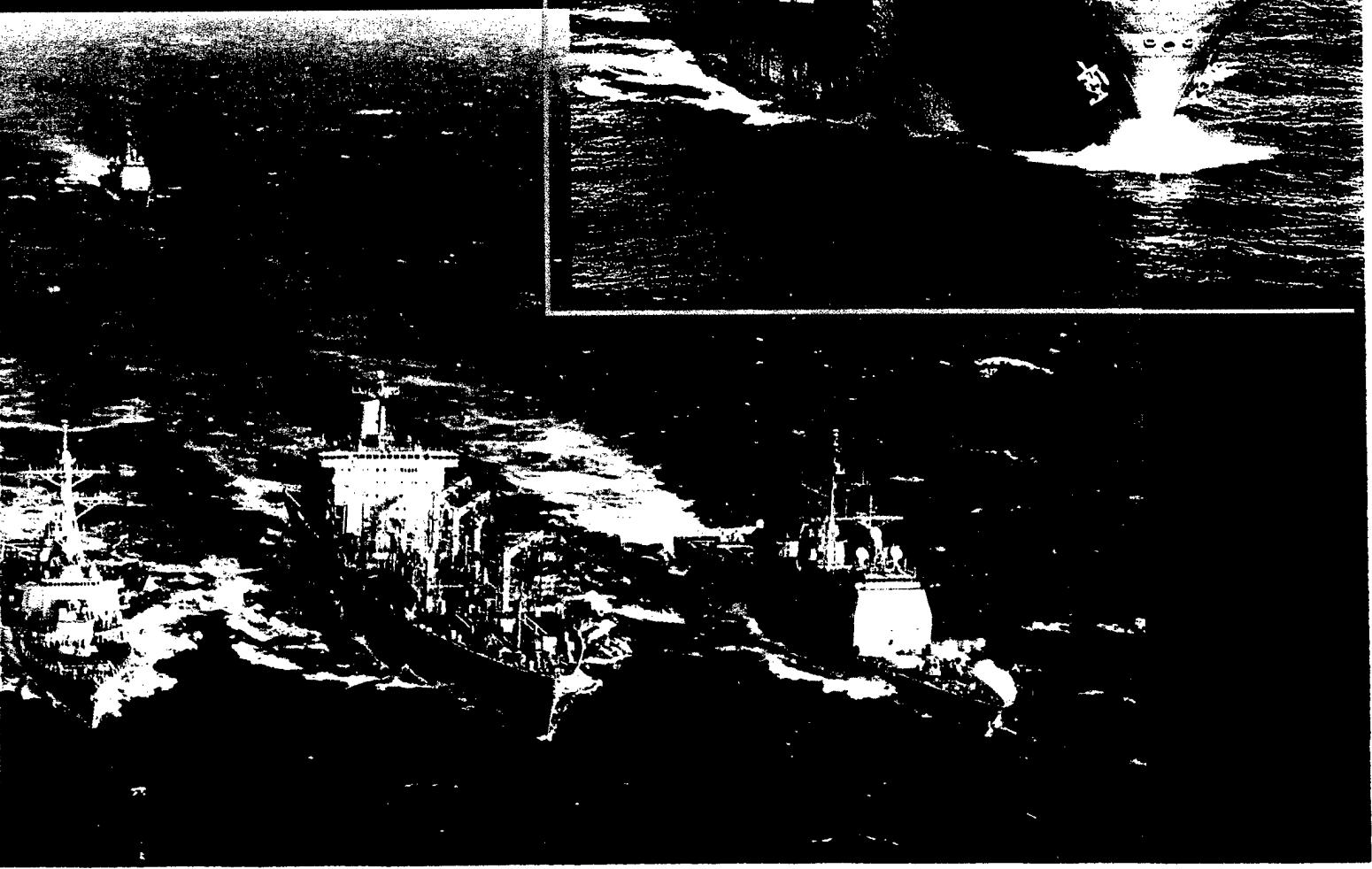


◀ Expanding the mission approach to all warfare areas should be pursued with energy and urgency to ensure the Surface Navy builds and maintains ships, systems, and valuable precision and lethal weapons, which are manned and operated by well-trained and tactically proficient Sailors, on call and ready to execute at the direction of the joint force commander. (USN)

The Surface Navy will be interoperable with joint forces in netcentric C4ISR and provide maritime force protection, precision strike and sea-based artillery, and theater air and ballistic missile defense to the air, land and sea elements of the joint task force.

► An open-systems architecture will enable future capabilities to be added easily on today's ships and in a more cost-effective and timely manner.

(USN)



Mentoring is a Matter of Duty

Navy leaders have an obligation to inspire, instruct and improve those whom would flounder without our guidance.

by CDR Cliff Perkins

Every morning as I begin the day, I look hard in the mirror and know that it is today that I may influence some young Sailor to make a decision that may change his or her life. This view is not self-serving, it is, instead, a matter of duty. Leaders in our Navy have an obligation to inspire, instruct and improve those whom would flounder without our guidance. I certainly don't have all the answers, yet I have some and am willing to lay them on the table for careful scrutiny.

I offer the story of one Elwood Haynes of Kokomo, Ind. He had a blacksmith shop in those days before the first cars were being driven, and he toiled to make ends meet. Elwood was the kind of man who always had an idea and was a "tinkerer." He told those willing to listen that he intended to build a "horseless carriage." So he kept working on his idea, and he soon developed an old wagon into a vehicle powered by an engine.

One day he rode down the street in his newly designed wagon and everyone came out to see what would happen. The wagon made a great deal of noise as it creaked and groaned along the dirt pathway. Most of the people thought old Elwood to be crazy and made great fun at his expense. They claimed he was mentally unstable because they felt that anything of

that design certainly could offer no real use. Mr. Haynes' reputation was in total ebb. But that crude, noisy wagon was the first automobile. Haynes was a leader in his field, a man far ahead of the crowd. The price of that leadership was the ridicule and lost confidence of many of his acquaintances.

Christopher Columbus was a thinker ahead of his time. He had come firmly to the conclusion that the earth was round, when everyone else knew it was flat. He was so certain that he endured serious attacks on his character. In fact, so serious that he risked his life and honor to prove that he was right. During his lifetime he was never quite able to convince his peers that he had proved his contention. He died in the shame and contempt heaped upon him.

The one who qualifies for leadership must be prepared to pay the price. Even today, the person who dares to step out receives the venom of the street-corner crowd. His or her purpose and enthusiasm are often misunderstood, perhaps by the very ones who would benefit most.

But the world moves ahead as its leaders rise above the ridicule of the unthinking crowd. True leadership always precedes progress, and always causes pain and loneliness. But the person with a pioneer thought seeks no approval besides that of his or her conscience.

It is not enough to do one's job: We who have been there must share our experience with all those who will listen. The hardest part is to face the scrutiny that comes with revealing the secrets we have come to know. What if the new crop of young people doesn't

listen? What kind of moral character do they have? How committed are they to the country rather than self?

Despite all the apparent contradictions of observable evidence, there are four characteristics that almost all real leaders have in common. First, and as a solid foundation for their other qualities, they possess knowledge of the field in which they work.

Second, leaders have courage, and in part, they have it because they know their job. The person who is doubtful is sure to be slow and timid, while the one who knows what he knows, is prompt and courageous. But leaders have an additional sort of courage which consists in being willing to take a chance: They try to be sure about what is the best thing to do, and when that is impossible, they act as though they were sure and go ahead anyway.

A third quality of leaders is activity, and this in turn is partially dependent on their general and special courage. They are continually doing something. If they do not know what to do in a situation that demands action, they do something. By doing something all the time, and being right most of the time, they get a great deal accomplished.

The fourth common quality of leadership is the ability to influence the actions of others. It is an effectiveness in contacts with one's fellow people, a talent for human relationships. It might be termed a sort of social skill. In last analysis it might be described as the ability to see things from the other person's point of view, and to make that person see things from your point of view.

The exercise of this quality largely depends on the ability to speak and write. One thing that leaders can always do is to communicate their thoughts to others, and this is true even in those cases where they have the reputation of being characteristically reticent... To the one who can express his thoughts in words so as to influence the rest of us, society gives its great rewards.

It takes all kinds of people to make a world, which is fortunate because it assures a place for all of us. Suppose you have a son, and you are hopeful that he will be at the top of his profession.

What qualities must he have? Brains? Sure. But extra high intelligence is not of first importance. The psychologists of Purdue University studied the exceptionally successful graduates of the engineering school and discovered that originality and looks (first-class personal appearance) were the chief characteristics of those enjoying the highest incomes.

The next strongest and commonest were aggressiveness and enthusiasm. "Then," says Walter B. Pitkin in 'The Twilight of the American Mind,' "came accuracy and self-reliance. Humor, neatness and sincerity were correlated with success only to a slight degree, while moral habits were not correlated at all. That is to say about as many successful engineers had very bad moral habits as very good ones. As for reasoning powers, they ranked 12th in the list."

The rarest combination in the make-up of people is superior intelligence and superior powers of organization and leadership. There is actually a surplus of highly intelligent people.

If you are hoping that your son will enjoy a material success do not be too optimistic if he merely gets high marks in school. He must combine scholarship with leadership.

The reason many people of superior intelligence make poor leaders is that they are so conscious of their superiority that they let it show. They are upset by the slowness of other minds, become irritable and are therefore replaced by inferior people who have the knack of making people like them and follow them.

Teamwork is so essential in all areas that success is dependent on it. Those who have the faculty of inducing others to obey their will are promoted to top rank, becoming the boss of smarter people.

These are simple thoughts and have not changed in centuries. There is nothing new today in the field of

and the willingness to die, if necessary, to preserve the union.

To my mind, *loyalty* is one of the finest words in the English language. A person without loyalties is like a ship in a storm without an anchor. Loyalty is a golden word, and faithful is the biggest one you can use about another. All of us cannot be brilliant, rich, or handsome, but all of us can be loyal and true.

Life without loyalty is as nothing. I believe the cruellest indictment that can be made against a man is that he is incapable of sustained loyalty. A man may be indolent, he may be reckless, he may be vain, but if he has the power to be loyal to principle or to persons, he is half-redeemed.

Being true to one's inmost self and acting thereon is loyalty. Webster's dictionary defines loyalty as fidelity to a superior, or to duty, or to love, allegiance, homage.

"The one who qualifies for leadership must be prepared to pay the price. Even today, the person who dares to step out receives the venom of the street-corner crowd. His or her purpose and enthusiasm are often misunderstood, perhaps by the very ones who would benefit most."

leadership. All those who would be in charge must be leaders. All those who would pretend to be leaders are usually betrayed by their own nature. In addition to leadership, we must re-instill in our Navy the quality of loyalty. It is not enough to talk about responsibility, honor, courage and commitment. We must remember what our nation was built upon

If this does nothing but spur disagreement, I have done my job. As people who represent our country, supporting and defending our Constitution, thinking must be a priority and speaking our thoughts a privilege we must exercise or lose. *Editor's note: CDR Perkins is the commanding officer of USS David R. Ray (DD 971).*



MENTORING THE NEXT GENERATION

"TODAY'S ENSIGNS ARE TOMORROW'S LEADERS."

— RADM MIKE MULLEN

by CDR Hank Miranda and LCDR Irene Smith

It is hard to imagine life 10 to 12 years down the road as the captain of a destroyer when you're the CHENG on a deployed DDG today. You haven't seen a liberty port in 45 days and that isn't counting the last port call in Jebel Ali with beer on the pier. The main reduction gear is broken, the paperwork is piling up in your inbox, and you're up to your neck in alligators.

A message has just come in from BUPERS informing you that your leading GSEC has just been transferred off the ship with no relief identified. On top of all that, the last two hours have been spent finishing up E-5 evaluations, when a class Charlie fire drill is called on the 1MC.

Afterwards, just when you're thinking life can't get any worse, the captain calls an all-officer meeting in the wardroom to discuss preparations for

next month's INSURV. "Will it ever end?" thought the lieutenant, as he made his way down the passageway.

After the meeting, the executive officer (XO) asks the chief engineer (CHENG) to meet him up in his stateroom. Once behind closed doors, the XO sinks wearily into his chair and motions the CHENG to sit down. The XO opens a drawer and pulls out a cookie tin. "Here, try some of these Girl Scout cookies my daughter sent me. I can't help but notice that you have been having a rough time. I know things have been tough lately, but I want you to know that you are doing a great job and you're not the first chief engineer who thinks the sky is falling." For the next 10 minutes the XO and CHENG talk.

Ten minutes later, the CHENG leaves the XO's stateroom, standing a little straighter and not quite as depressed.

Junior Officers, Mentoring and Retention

One of the issues that came out of the Surface Warfare Officer Junior Officer (JO) Survey, distributed in July/August 1999, was the need to take a more active approach to mentoring. Concerned about declining retention rates among junior officers, RADM Mike Mullen, Director, Surface Warfare, initiated the survey to measure the attitudes and perceptions of junior officers. On Aug. 13, 1999, 4,524 surveys were mailed to all officers in year-groups 1990-1998. With an overwhelming response rate of 55 percent, the survey's results provided a clear vision of what junior officers (JOs) deemed important.

The survey revealed that junior officers ranked access to mentoring as one of the strongest factors influencing professional development and retention: Lack of and poor mentor-

ing was one of the dissatisfiers identified in the survey. Only 44 percent of the officers participating in the survey stated that they have a senior officer whom they consider their mentor. When queried on where junior officers went for career advice, only 46 percent said that they received adequate career advice from their CO/XO. When asked in the Junior Officer Survey where they went to for career advice, 27 percent said they relied on their peers. Twenty percent relied on their commanding officer, 14 percent relied on their department heads, and four percent relied on the detailer. Lots of JOs were blunt in their written comments and expressed their frustration with the lack of career guidance and attention they found in the Surface Warfare community.

Mentoring in the Navy has always been a spotty proposition. There is no curriculum at SWOS that teaches commanding officers and executive officers how to mentor. Seldom does one hear sea stories about mentoring. In fact, one JO wrote on his survey that the only commanding officer on any of his ships that ever took time out from his schedule to mentor him was an aviator. However, talk to most mid-grade and senior officers and you will find at least one example of mentoring that has occurred in the course of their naval career. It is well-documented in business journals and research papers that mentoring relationships offer a number of important career benefits to the protégé. The December 1999 issue of Naval Institute's Proceedings reported that in a recent survey of retired flag officers, 67 percent of the respondents had been mentored during their naval careers. They also reported having an average of three significant mentors during their careers. In more than

half of the cases, the primary mentor was the person's commanding officer.

With today's robust economy and record low unemployment, competition is fierce between businesses and corporations to attract and retain talented workers. The result is leading to fundamental changes in workplace culture. Mentoring is one of the methods used by many companies as key to fostering employee learning and development. In the Surface Warfare community, senior leadership is focused on similar challenges: How to keep and retain its best officers.

Meeting the Challenge

To meet this challenge a Junior Officer Retention Symposium was held in Crystal City, Va., November 7-8 last year. The symposium was made up of senior and junior officers from the Atlantic and Pacific Surface Fleets, the Naval Academy and the Surface Warfare Officers' School. Mentoring was one of the topics discussed as an important instrument in retaining junior officers. The JO's were asked by senior officers for suggestions on how to improve the Surface Warfare community. For several of the lieutenants who had been invited to attend, this was their first experience working with flag officers. For the senior officers, it was an opportunity to gain insight about junior officers and the Navy at large. For both groups, it was an opportunity to put words into actions. Mentoring is a two-way information street. There is information to be learned from both sides. Through mentoring, senior leadership quickly discovers what is what is not working—valuable feedback from those who make the organization work.

What is mentoring?

Mentoring is caring. Mentoring is a formal or informal relationship that

exists between a senior and a junior for the purpose of supporting learning and professional development. The mentor provides ongoing support, advice and career guidance to an individual. A mentor holds a higher position in the organization and also can be outside of the mentee's chain of command. A mentor can exist at each level in the chain of command and is not limited to the commanding officer. However, the commanding officer is probably the best mentor because he has the most wardroom experience.

One example of positive mentoring, shared by an officer at the symposium, occurred early on in his career when he was a lieutenant junior grade, assigned to a West Coast cruiser in the early 1980s. The CO (now a retired admiral) brought the

wardroom together one afternoon and sketched out his career on butcher-block paper detailing significant milestones in his career, both professional and personal. On one side of the paper, the CO listed his personal accomplishments, including marriage and children. On the other half of the paper, the captain listed his career milestones, beginning with his division officer tours to his department head tours, to rolling ashore for his first shore assignment. The captain was frank with his officers admitting that he was unhappy with the Navy at the time and had, at one point, put in his letter to resign. Later events occurred at sea that caused him to change his mind and pull his letter. It was a very illuminating exercise. Not only did it make the captain more "human" to his junior officers, but it also pointed out that he, too,

had been through many of the difficult decisions that the wardroom's JOs were currently struggling with, including how to balance both career and family.

Fast-forward 11 years. The same JO who sat in the wardroom and listened to his CO tell the story of his career while on a deployment was now an XO of a cruiser out of Norfolk. Like his captain before him, the JO persevered in the Navy, stayed at sea for two division officer tours, rolled ashore, got married, started a family and continued his career at sea as a department head. He not only took the hard jobs, but also thrived in them. On the day the XO detached from his ship, the navigator/administrative officer came by to offer his respects and say goodbye. He thanked the XO for his career advice and, most importantly, for the opportunity to run with the ball so long as he didn't drop it too often. Today, after a two-year shore tour at a NROTC unit, that JO is a chief engineer on a deployed DDG. Mentoring fosters mentoring.

What are the qualities of a good mentor?

There are three qualities that a mentor should possess to be effective. The mentor must be credible. The message must be genuine. The mentor must be accessible. The mentor must be committed. These also are elements of good and basic leadership skills. The mentee also must be committed to the relationship for the process to work.

Ideally, a mentor must be knowledgeable, people-oriented and have a genuine interest in mentoring. He or she also must be approachable. As ensigns, lieutenants are looked upon as minor deities and captains are gods. It takes a lot of gumption to



▲ The chain of command needs to be involved in the mentoring and leadership process. (PH3 Renzo Amariz/USN)

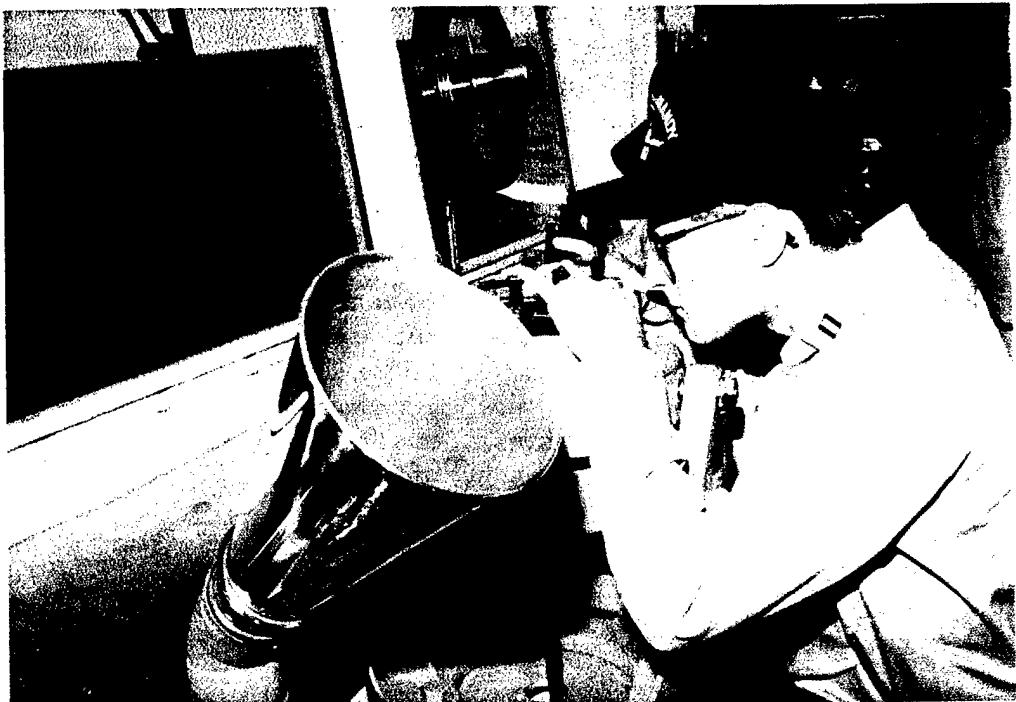
▼ The Surface Warfare leadership recognizes that people are our most valuable resource. (DOD)

go up to a senior officer and talk to them, let alone ask for career guidance. Let's face it, a successful naval career yesterday, and largely today, depends on a lot of luck and being at the right place at the right time.

Reporting to a ship at the beginning of a deployment cycle is more satisfying than reporting to a ship that is entering into a two-year overhaul.

Mentoring and Coaching Junior Officers

Today's junior officers are different. Accustomed to working independently, devouring information and pursuing multiple activities simultaneously, JOs still are propelled by the same issues that drive all of us to ask someone at a critical juncture in their life, What do you think of this idea? Would this be a good career move? What should I do? Today's junior officers expect to be legitimately mentored and coached. They want to be able to approach their seniors, who have years of experience, and learn from their wisdom. The best advice my mentor gave me: "Remember, 20 years of experience takes damn near 20 years to get." The chain of command needs to be involved. So how



hear. Mutual trust between the mentor and the mentored helps soften the sting often associated with honest communication.

This brings me to the next point. It may seem like a worn out expression but... "there is no such thing as a dumb question." If it is important to the individual to ask, then it must be treated as such. Second, we are all unique with varying experiences and education, so

group of peers. Third, having an open-door policy. Let your people know they can come and talk to you. Mentorships don't have to take place solely on the ship. One of the best examples of mentoring I've heard of recently is the CO who took his JO out to the golf course for a round of golf. The lieutenant was weighing his alternatives of whether to stay in the Navy and become a department head or punch out. The CO, sage and wise, knew he couldn't twist the lieutenant's arm to make him stay. But, he did know that taking the time out to play a round of golf and talk with the junior officer was the perfect forum for a free-flowing exchange of experiences and concerns, especially if the CO's remarks were save for, during the back swing of a crucial putt.

The survey revealed that junior officers ranked access to mentoring as one of the strongest factors influencing professional development and retention: Lack of and poor mentoring was one of the dissatisfiers identified in the survey. Only 44 percent of the officers participating in the survey stated that they have a senior officer whom they consider their mentor.

do you promote your accessibility as a mentor? Trust is a critical element in the mentoring relationship. Both parties must be open and honest. Mentors must be able to tell those they mentor what they need to hear, even if it is not what they want to

what worked 10 years ago, may not work today. Finally, simply listening is often what the mentee is seeking. Bouncing ideas off someone who has "been there and done that" can be more effective than throwing the idea out in a bull session among a

When do you use mentoring?

A significant aspect of leadership involves the development and growth of subordinates. It's up to the mentor and mentee to decide how often formal or informal meetings,

or discussions, occur. When an individual is new to an organization, capturing the respect and "buy-in" of newly reporting crew members is crucial to the mentoring process.

One example of mentoring gone wrong involved an FFG out of Norfolk where a lieutenant went up to sign his fitrep with the captain. Despite being a wonderful human being and a hard worker, the captain knew that this young junior officer, despite extensive counseling sessions by his department head, required a lot of supervision and would not fare well as a department head. The captain encouraged the young officer to apply for Naval PostGraduate school with the understanding that his talents and abilities would be better served in another community and that he should consider changing designators. The lieutenant, not reading between the lines and understanding that he was being told to go and do something else, misread his CO's good intentions. The lieutenant went on to post-graduate school and then proceeded onto department head school. Once out in the fleet the individual failed miserably as a department head and left the Navy as a lieutenant. The bottom line here is, don't sugar-coat the truth.

What should a mentee be prepared to discuss?

When asked, the mentee should be prepared to discuss his or her goals. These should include both short- and long-term goals. Additionally, the individual needs to have both professional goals and personal goals and a general or detailed plan on how to achieve them. The achievement of both professional and personal goals can form a very sound basis for the mentor/mentee relationship.

The mentor provides guidance and a perspective on where the mentee is along the path to achieving his or her goals. The mentor can provide honest feedback and guidance. The mentor listens, coaches, counsels and motivates.

It takes time to mentor. Too often the most common experience a JO has with their CO, XO or Department Head, is when they are standing in front of them explaining why their PQS and PMS reports are

and strengthens the captain's public statements of caring for his officer and crew.

The results of the JO Survey were loud and clear. Command leadership has the greatest impact on career decisions, and mentoring is an essential ingredient in building a better Surface Warfare community. Mentoring develops leaders. All senior enlisted personnel, department heads, the chief petty officers' mess and wardroom are part of the mentoring team.

The results of the JO Survey were loud and clear. Command leadership has the greatest impact on career decisions, and mentoring is an essential ingredient in building a better Surface Warfare community. Mentoring develops leaders. All senior enlisted personnel, department heads, the chief petty officers' mess and wardroom are part of the mentoring team.

not in on time. One commanding officer, newly reporting to his ship, came up with an innovative approach to mentoring. He wrote a list of 10 questions, which ranged from what was the last book read to those covering the individual's professional, personal and financial goals. The questions were given to the designated JO an hour before his meeting with the CO. This was done to prevent the junior officers from brainstorming and coming up with prepared answers. Following an offer of a cup of coffee, the two would embark on a 30-minute private exchange of ideas and philosophies, perhaps not even delving into the scripted questions. Similar discussions were held between the CO and the Plan of the Day's "Sailor in the Spotlight" for 15 minutes every day before lunch. It is this type of quality and dedicated time with the captain that makes a lasting impression

The Surface Warfare leadership recognizes that people are our most valuable resource. All of us must encourage personal development—mentally, morally and physically. It means holding the line on unnecessary and excessive work demands and taking the time to balance our personal and professional lives. We need to reinforce who we are as a community, what we believe, where we are going, and how we will get there. The success of our community involves looking at new directions and innovative solutions. Mentoring is the visible reminder that we are committed to taking care of our people.

Editor's section note: CDR Hank Miranda is head of Surface Warfare Plans and Policies (OPNAV N869C) on the staff of Director, Surface Warfare (OPNAV N86); LCDR Irene Smith is public affairs officer for (OPNAV N86).

A Night of Choices

Inside Memorial Hall at the United States Naval Academy, there is a famous banner hanging majestically on the walls. It's hard not to notice because its blue field with its braided gold wording

pads with a list of ships on them—lists that had been committed to memory days before. They cheered when the group of assembled Surface Warfare flag officers wished them well.

Then they listened.

And they waited.

Some talked with friends.

Some prayed.

But all of them kept a watchful eye ahead. Then, one by one according to class ranking, they were called into the Hall to select their first ship.

Directly under John Paul Jones's imploring banner stood two large boards. One labeled West Coast. One labeled East Coast. On each board was a laundry list of ships: cruisers and destroyers, frigates and amphibs—and everything in between. VADM Edward Moore, Commander-in-Chief, Pacific Fleet, stood before the board listing Pacific fleet ships. VADM Hank Giffin, Commander-in-Chief, Atlantic Fleet, stood in front of the board listing the Atlantic fleet ships. One by one, the parade of midshipmen walked to the board and made their selection. One by one, the names were read over the 1MC, informing the rest of the observers of the selection. One by one, the duty stations were taken. Midshipmen in front of the line calculated their move, waiting to see if their plan would pay off. Midshipmen in the back of the line grew more and

Service Selection Night at the Naval Academy

commands your attention. It says simply, "Don't Give Up the Ship."

To your left are ensigns that flew on USS *Constitution*, USS *Constellation* and USS *Detroit*. To your right are the ensigns from USS *Enterprise* and USS *Augusta*. Memorial Hall inspires. The flags of battle evoke the heritage, history and tradition of the Navy. But walk around the hall and read the plaques, and everything becomes desperately personal. Bronze markers dress the walls in solemnity. Some are dedicated by family members and friends. Some are from classmates at the Academy. But all symbolize the honor, courage and commitment of men and women who gave their lives going down to the sea in ships.

On a cold, icy night in January, hundreds of midshipmen gathered at the base of the stairs leading up to Memorial Hall. Many were anxious and nervous. Some of them glanced repeatedly at note

by Robert F. James

more anxious as each platform was removed wondering what would be left.

It is service selection night, and the first major step in a midshipman's career path. It is an event with significance not lost on Surface Warfare's senior leadership.

Each midshipman striding to the board echoed the theme of early leadership opportunities. "It takes junior officers and gives them the opportunity right from the get-go to have leadership opportunities," said Midshipman First

selection night throughout that officer's career. It is not enough to be excited simply at the first prospect of service at sea. That excitement must be harnessed and nurtured throughout the duration of that officer's career. To accomplish that



VADM Edward Moore, Commander-in-Chief, Pacific Fleet, talks to one of the SWO midshipmen. (Photos by PH2 Brian Aho/USN)



Service selection night is the first major step in a midshipman's career path. It is an event with significance not lost on Surface Warfare's senior leadership.



Midshipman First Class Gutch selects her ship.

Leadership

Before a midshipman is ready to select a ship, he or she first must have decided to "go SWO." Each community has its own brand of enticement, but Surface Warfare long has been recognized on the merits of its opportunities for junior officers to jump into the fray and lead.

"Definitely the leadership," said Midshipman First Class Elizabeth McQuinn. "If you want to go straight out of here and lead people, then the best community is the Surface Warfare community." MIDN McQuinn was first in line, having the privilege of choosing from either West Coast or East Coast and from any ship on the board. She chose **USS Port Royal** (CG 73).

Midshipman First Class Robert Neiley, who chose fourth overall when taking **USS Ingraham** (FFG 61), echoed the value of early leadership opportunities. "Compared to other communities you get a pretty good grasp pretty early on. Within three or four months I'm going to already be in control and getting the opportunity to manage."

Class Taylor Rempe, who chose **USS Ramage** (DDG 61) with the 10th overall pick. "Other communities spend most of their time when they are very junior training. I prefer to be thrown right in there to see what I'm capable of doing."

No one is more aware of what being thrown into the mix can produce. RADM Mike Mullen, Director, Surface Warfare (OPNAV N86) talked not just about early leadership opportunities as being enticing to young men and women, but also about the promise of leadership opportunities throughout that individual's career. "We extend that [leadership opportunity] throughout the career path. You can be a CO as a lieutenant, a CO as lieutenant commander, a CO as a commander and a CO as a captain. What we train the midshipmen for, more than anything else after this laboratory they've been in for four years, is to come out and practice the leadership skills they've only started to develop."

Part of the leadership continuum, however, comes in maintaining the enthusiasm and momentum of ship

fostering, junior officers already in the wardroom play an enormously powerful role in shaping this new class of midshipmen preparing to join the fleet.

"I say that, particularly as these new midshipmen are commissioned and come aboard ship: junior officers need to take them under their wings and show them the incredibly positive opportunities they have in the surface warfare community," said Mullen.

Good leadership examples at the lowest commissioned ranks, followed by competent middle-grade leadership, produces senior leadership that is driving the community toward a more capable force, staffed by a more proficient and passionate cadre of officers.

MIDN McQuinn quickly pointed out how influential good senior leadership can be. "RADM Mullen made it happen for me to be able to pick a ship. I'm going on to graduate school so he really made it happen. This is going to be the only time in my career I get to say that I want to go to this ship in this port...and get it." It took RADM Mullen's direct involvement to allow MIDN McQuinn to walk to the board

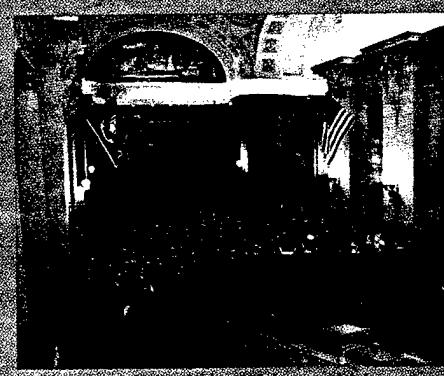
and select *Port Royal*. However, her excitement was obvious. She not only picked the ship she wanted to serve aboard, but also recognized that senior leadership in the SWO community cares about the future of its future junior officers.

"Previously I would not have been able to pick a ship," said McQuinn, "[but] he talked to the detailers and said that there's no reason that someone who is going four months later

officer for Theater Air Defense and Surface Combatants. "I was looking at their faces, and I saw a lot of smiles. I hope they understand that even though we're senior officers now, we were like them once. We understand and want to understand what motivates them. They're more assured, smarter, more aware and much more mature than we were at that age. So we all get just as much out of this as I hope they get out of us being here."



Midshipman First Class Horn selects USS *Princeton* (CG 59).



Midshipmen gather at the base of the stairs leading up to Memorial Hall.

the proper care and nourishment, that seed will never produce a crop. It takes a capable farmer who understands the environment and how best to give the seeds the opportunity to grow. The soil must be tilled and prepared to receive the seed. The young plants have to be kept free from weeds, blights and insects. They must be nourished. They must be taken care of. That complete nurturing is the job of the entire fleet. Ship commanding officers have to be



The Navy's future SWOs spread their wings. The Surface Warfare community offers the best opportunity for immediate success.

than the rest of the class shouldn't be able to pick a ship. So he said make it happen..." And happen it did.

While not every midshipman can tell a story like MIDN McQuinn, they all got a first-hand glimpse of just how serious the senior SWO leadership views its future leaders. For the selection night, more than a dozen flag officers, representing virtually every facet of surface warfare, were on hand to welcome the midshipmen into the community. "It means a lot to me because it means that they are interested in the future of the community," said MIDN Rempe. "They are interested to see and support us when we are making the biggest decision of our careers."

And it's not just the midshipmen who took something out of the flag-level presence at the event. "It was thrilling for me to look at them," said RADM Bill Cobb, program executive

Seed Corn

So what is it that brings out such an array of stars? Why does a parade of midshipmen picking their first duty assignments produce such a stir? The simple answer is that these young men and women are the future of the Navy—what VADM Giffin likes to call "seed corn."

"These are our seed corn. These are our future," said VADM Giffin. "We ought to treat them right from day one and make them want to be SWOs, and this night to be more than just picking up a name off a chart. We want them to think of the long term. The more focus we put on them early on, the more it will pay off down the road."

That approach is precisely why the seed corn analogy is worth remembering. There may never be anything wrong with the seed itself, but without

prepared to recognize how best to cultivate the potential from these soon-to-be-SWOS. The wardroom has to come together to make sure that the new ensigns are steered in the right direction. The enlisted community has to pull together to do the job right. It is only through a concerted team effort that this seed corn will grow tall enough to produce a harvest.

"When I was applying to the Academy, I decided that someday I wanted to be the CO of my own ship," said Midshipman First Class Janice Geldmacher, who chose USS *Chancellorsville* (CG 62) as her first ship. "So it's kind of been my route from the beginning, and I feel like I've taken my first step along that path tonight."

Now it is up to her to line herself up with the best opportunities to allow her to reach the goal of commanding

her own ship. But it's up to the rest of the fleet to make sure she has the chance to make the most of those opportunities. With the strong showing of flag leadership at the selection night, the groundwork already has been laid, not just to push MIDN Geldmacher toward her goal, but also to instill in her a sense of the kind of leader she hopes to become. "The fact that they took time out of their busy schedules to come down here and be with us when we are picking our ships speaks volumes. Hopefully that will carry over into the fleet," Geldmacher said. "I think that seeing them here will impact me by pushing

And it is their ship. Every Sailor—officer or enlisted—who serves aboard a Navy vessel has ownership of it. If one piece fails, then the whole ship fails. But motivating a crew of men and women to excellence is a challenge. Attitudes trickle down from the top to the bottom. If the commanding officer is excited, then the wardroom can be excited. If the wardroom is excited, then the Sailors under the command of those officers are excited.

But the reverse also holds true. And for years, the Surface Warfare community has battled a negative image of a community that eats its young. Stereotypical SWOS and anecdotal sto-

they encourage us to have a positive attitude about it." VADM Moore reiterated that if the change in perception is to continue, then communication is the key. "I think that communicating with the people who work for you, finding out what their opinion is about the work they are doing, is just good business sense," said VADM Moore. "Not just for the SWO community, but for IBM, or General Motors, or anybody. Get the perspective of the people who are out there with the work that you are asking them to do."

In the case of the SWO community, the job description entails young men and women putting their lives on themselves "on the frontline, leading," said VADM Moore. If the trend of positive change within the SWO community is to continue, RADM Mullen says, regarding junior officers, "I think we must treat them very special as we are tonight. Having chosen the SWO path, we now need to make sure that their training is exceptional. We need to ensure they are welcomed into their new wardrooms—feel that membership and camaraderie very quickly. Then they'll get that opportunity for responsibility and leadership when they get aboard the ship."

Abraham Lincoln said that the philosophy in the school rooms of one generation will be the philosophy of government in the next. The same principle holds true for the SWO community. The way the community is viewed in the Naval Academy, in NROTC units on campuses across the country and in Boot Camp at Great Lakes, will determine how the community is viewed by the next generation of Sailors. Success breeds success.

RADM Mullen perhaps stated it most succinctly: "Hopefully they'll send that message of excitement and enthusiasm back here to other midshipmen who are junior to them. That's how it begins. And that's how it carries on."

"These are our seed corn. These are our future," said VADM Giffin. "We ought to treat them right from day one and make them want to be SWOs, and this night to be more than just picking up a name off a chart.

We want them to think of the long term. The more focus we put on them early on, the more it will pay off down the road."

—VADM Hank Giffin, Commander-in-Chief, Atlantic Fleet

me toward being that kind of leader—the kind of leader who truly cares about her people."

Outside the Academy

You don't have to be a product of the Naval Academy to recognize the significance of the evening and see how the principles displayed here apply to the rest of the fleet. Every Sailor, from E-1 on up, knows what it's like to report to that first duty station. They remember the mixed feelings of fear and excitement looking down the pier at the gray hulls until their ship comes into view.

ries of Surface Warfare life abound. This negative image, however, through the work and attention at the highest levels of the community, is changing.

"I found that the bad reputation comes from junior officers and midshipmen who aren't SWOs," said Rempe. "Midshipmen, of course, don't really know what they're talking about. But as far as SWOs go, there are two types: those who want to get out, and those who want to take it seriously. We have very good influences and leadership examples with the Surface Warfare officers here, especially the junior officers because they like their jobs and

SURFACE WARFARE

A Junior Officer's Perspective

by LTJG Amy Morrison

Ex Scientia Tridens. From knowledge, sea power. As a newly graduated junior officer from SWOSDOC, I wondered, 'What does a junior officer have to do to gain that knowledge and qualify for Surface Warfare?'

Previous discussions and sea stories had led me to believe that qualifying SWO was potentially a next to impossible uphill battle. My experiences on USS *Laboon* (DDG 58), however, have shown me that, while the qualification process is not an easy one, junior officers may draw encouragement from the fact that it is not necessarily a process that they undergo alone. Positive leadership of junior officers builds knowledge, instills a will to succeed and increases overall job satisfaction.

Qualifying Surface Warfare is a function of many components. Three key components include: the ship's schedule and position in her training cycle; a junior officer's drive and self-motivation to succeed; and a command climate that nurtures and encourages progress. As a junior officer on board *Laboon*, I was fortunate to arrive as the ship got underway for her first workup with the battle group and, therefore, have had numerous opportunities to earn PQS signatures. Additionally, as with many of the other *Laboon* junior officers, I was motivated

to learn and to aggressively pursue the qualification process. Finally, I was encouraged and supported throughout my qualification process.

On board *Laboon*, the crew focuses on a combat-readiness philosophy. The fundamentals of this philosophy—pride, determination, leadership, maintenance, training and safety—apply to all crew members, from seaman recruit to commanding officer. Application of these fundamentals are evident in every aspect of life on board from crew-wide deployment goals to an aggressive training and development program. An inquisitive

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"My experiences on USS *Laboon* (DDG 58) have shown me that, while the qualification process is not an easy one, junior officers may draw encouragement from the fact that it is not necessarily a process that they undergo alone."
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junior officer, I initially wondered how these combat readiness fundamentals would affect me personally. The answer: a great deal. From non-SWO training to officer training and non-SWO progress reports, I have been encouraged to develop my professional knowledge and skills.

Junior officers are rotated on the watchbill to allow for maximum developmental progress. While mentoring is a component of the training program, each individual proceeds at his or her own pace. The training program eliminates artificial qualification barriers.

Every officer, chief and petty officer is encouraged to step out and challenge himself or herself with a new watchbill position. As individuals challenge themselves and qualify, *Laboon* has created a more flexible watchbill. Moreover, *Laboon* has created a developmental spirit. Individuals throughout the ship have seen their shipmates qualify, and a benchmark has been created. The desire for professional development and qualification is rampant and widespread throughout the entire crew.

While it is clear that there are several components key to a junior officer's qualification, a nurturing command climate has been key to my qualification on *Laboon*. A positive qualification process has altered my preconceived notion, implanted somewhere in the mind of every junior officer, that "SWOs eat their young." My paradigms have been shifted. From my perspective, "SWOs teach their young." I am encouraged by this process and am further challenged to continue developing myself professionally. Inherent to this process, I am also motivated to teach and aid other junior officers, chief petty officers and petty officers. *Ex Scientia Tridens. Laboon, Without Fear!*

*Editor's note: LTJG Amy Morrison is the damage control assistant for USS *Laboon* (DDG 58).*

Successful People Set Goals

by CDR Gene Moran

The sooner a junior officer or enlisted Sailor attains watchstander qualifications the better off everyone—officer, Sailor, watch team and ship—is because they then can *contribute* directly to the ship's missions. And ensuring that processes are in place to qualify new arrivals is essential to a ship's self-sustainment and to watchstander and fulfillment. The sooner that the new arrival is fully qualified, the better. Building the bench of qualified watchstanders is key to mission readiness because it enhances the ship's responsiveness and options.

The most successful ships continually work on both long- and short-range plans. Integral to long- and short-range training plans is the watch-team replacement plan. This plan must map out a clear path to ensure there are qualified watchstanders in sequential quarters of the ship's operational cycle. All ships have a training program, which is documented in a training instruction or personal qualification standard (PQS) instructions. Each contain the numerous prerequisites and standards that comprise an individual's path to qualification. Such documentation is necessary for professional sea service, which demands an exacting standard.

The most important idea for the ship's qualification-process supervisors is for them to see the process through the eyes of the newly reporting Sailor or junior officer. How daunting is the qualification process? Is it reasonable?

Are the expectations of the new arrival presented as an expected goal? Or, is it a list of the many "must do's" such as 3M, DC, ESWS qualification/ requalification, condition I/III watch, special-detail assignment, etc.? Many ships have devel-

oped ways to break these multiple requirements down to bite-sized manageable and attainable goals.

Successful people acknowledge that part of their success is attributable to setting achievable goals and mapping out plans to attain them. Most officers and enlisted personnel admit knowing what goal setting is; however, many admit that they don't pursue goals in a specific manner. Many keep their goals in their head, thereby giving the goal legitimate status as a "dream."

Having long- and short-range goals help individuals progress, along with helping him or her with the day-to-day turbulence of life in the Navy. In addition, working toward a long-range plan has a stabilizing effect because it helps new arrivals set, plan and achieve attainable goals, which is an essential element of a positive, professional climate. It also plays a bigger role in retention and long-term commitment to the Navy than some may realize. The simple concept of goal setting can be easily understood at the shipboard level when tied to a specific end, such as a watchbill in the initial example.

During today's boot camp, Sailors are introduced to the Navy Goal Card, which focuses largely on professional advancement. If used properly, it can become an integral element of a Sailor's development. The concept of goal setting can be expanded and introduced (or reintroduced) to further impact the lives of all crew members. Three broad categories that affect every officer's and enlistee's include Professional, personal and financial. We can all benefit from advancements in these areas.

Professional goals can directly and positively affect an individual's future via-

bility in the Navy. More immediately, establishing and pursuing professional goals bears directly on the ship's watchbill. Attaining Enlisted Surface Warfare Specialist (ESWS) qualification, dedicating study time for advancement exams and qualifying for additional watch stations enhances one's utility to the ship's watchbill. The possibilities are many... they just need to be brought out into the open and written down. Helping our juniors move up the ladder is leadership.

Personal goals can serve as a free-for-all. Some subsets of this category might include losing weight, donating blood, completing an off-duty college course or volunteering to help the less fortunate. This category can serve to round out any individual, no matter their background. Helping expose our juniors to broader responsibilities is leadership.

Financial Goals can benefit every Sailor—from establishing to executing a roadmap to financial betterment. Many officers and enlisted alike don't know exactly where all of their money goes, although most know they feel they need more. Ask a Sailor if saving \$1,000 by the end of a year sounds achievable? Desirable? Then how they might do it? The first part is easy...the second part takes some thought. Helping younger people take hold of their financial future is also leadership. An important by-product of such a generalized goal-seeking mentality is the sense of fulfillment that develops over time: individual and collective-crew fulfillment. The crew soon realizes the impact the advancements in the broad categories have on the individual and on the ship. It's easy, it's painless, and it's free. Yes, it's obvious...and more of us must help the next generation do it—and to do it better!

Editor's note: CDR Gene Moran is the commanding officer for USS Laboon (DDG 58).

MISSION

AREA

TIME FOR A
FRESH PERSPECTIVE

TRAINING

By CAPT Lloyd Swift

Last May, RADM Mike Mullen, Director of Surface Warfare (OPNAV N86), published a vision for the future of Surface Warfare that included the following statement: "The Surface Navy will be an offensive maritime force. From a foundation of maritime dominance, we will ensure entry into the 21st-century battlespace through the twin missions of land-attack and theater-air dominance. The Surface Navy will be interoperable with joint forces in network-centric C4ISR and will provide maritime force protection, precision strike and sea-based artillery and theater air- and ballistic missile-defense to air, land and sea elements of the joint task force."

In the Surface Warfare Training Strategy Instruction (OPNAVINST 1500.57A), published and distributed last August, N86 stated that "the key to success in meeting these demands will remain in the hands of the Navy's most valuable asset: Its people." There are numerous combat systems under development to support this vision, but because they are varied and complexed, they will place many new and challenging demands on our Sailors. Likewise, the training to support these new systems will place many new demands on our ability to clearly define, resource and sustain manpower and training requirements. Nowhere is this more evident, or more of an issue, than in the evolving land-attack warfare mission-area.

Responsibility for land-attack warfare systems and weapons development is spread across four program executive officers (PEO's) and six program offices in the Naval Sea Systems Command and the Naval Air Systems Command. Further, command and control and information-technology architectures are being developed by the Naval Space and Warfare Systems Command, as well as



▲ If development continues using "traditional" acquisition and design procedures, without direct and frequent fleet input, surface combatant land-attack warfare systems risk may not meet the litmus test of joint and fleet interoperability, compatibility and supportability. (PH2 Arlo Abrahamson/USN)

within DOD, including our sister services, who will be our customers. Developed in isolation using "traditional" acquisition and design procedures, without direct and frequent fleet input, any or all of these surface combatant land-attack warfare systems may not meet the litmus test of joint and fleet interoperability, compatibility and supportability. Further, manning of these systems and the training required to ensure successful employment of these systems may not be optimized.

RADM Mullen recognized that these issues injected an undesirable risk level into several Surface Warfare acquisition programs, as well as the ability of the Navy's surface combatants, to conduct the land-attack warfare mission. He took the lead and chaired a meeting with all of the PEO's involved in either developing or directly affected by surface combatant land-attack warfare systems. He did this to specifically engage them

on the necessity of developing an integrated plan to support land-attack warfare training from a mission-area perspective. In addressing this group, he clearly stated that land-attack warfare training must be integrated into our combat systems to realize resource efficiencies and to optimize manning and combat readiness. He added that this training must be analyzed and training tasks defined at the operator, combat

As new missions are identified, or evolved, it is critical to address mission-area manpower and training requirements from the very beginning of system acquisition and design. We no longer can afford to design systems without considering the full impact that systems will have in the joint battlefield or on the ability of battle groups and amphibious ready groups to operate and conduct realistic fleet training at sea or ashore.

team, battle group and joint operation level. He said that the development of a mission-oriented land-attack warfare training guidance, which would provide a reference and top-level guidance to pro-

gram managers and the fleet on mission-area training requirements is needed. This is essential to the successful delivery of timely and effective land-attack warfare training and overall mission effectiveness.

The land-attack warfare mission-area training guidance document will not replace individual system training plans, which are required to establish individual operator and maintenance-training requirements and life-cycle training and logistics support. But rather, complement individual Navy Training Systems Plans and act as a forcing function to ensure individual programs look beyond their respective lifelines when considering manpower and training. More significantly, this document will provide the fleet and the systems command the venue to identify, discuss and approve fleet and joint-level training issues and requirements, which, in the past, have been disconnected from or addressed too late to influence system development.

All PEO's with land-attack warfare responsibilities agreed to support this initiative. Significantly, and as an outgrowth of the initial meeting, N86 chartered a Capstone Surface Land-Attack Warfare Organization, charged with developing an

overarching concept of operations, a total-system approach toward developing and integrating land-attack warfare capabilities into surface combatants and publishing a top-level mission-area training guidance document. This document will provide a single, coherent plan for Surface Combatant Land-Attack Warfare Training, establish comprehensive mission-area training requirements for all systems, provide commonality in mission-area training across all systems and direct that human-system integration be institutionalized in system design and acquisition. Updated annually, it will be the source document for addressing fleet issues and assessing future requirements, including live-fire ranges, single-siting land-attack warfare training and simulated versus live-fire training.

In support of the Capstone Surface Combatant Land-Attack Warfare organization, working groups have been established, organizational meetings have been conducted and plans of action have been briefed to a flag officer executive steering committee. The initial OPNAV/Fleet/ System command meeting to discuss Land- Attack Mission-Area Training Requirements will be conducted this spring.

▼ We must institutionalize human system integration and human-centered design in the acquisition and design process. (CWO2 Seth Rossman/USN)

This is the first time the Surface Warfare community has formally addressed joint battle group and ship-level mission-area training as critical to individual system acquisition, design and development. That is the good news. The bad news is we are behind the power curve and, in several programs, decisions already have been made and action underway, which may preclude development of a completely optimized and integrated land-attack warfare training system. Nevertheless, the issues and requirements must be discussed, and guidance must be developed through a land-attack warfare mission-area training guidance document, which will move us toward total-system interoperability, compatibility and supportability. To do otherwise in today's fiscal, operational and joint environment would be very shortsighted.

As new missions are identified, or evolved, it is critical to address mission-area manpower and training requirements from the very beginning of system acquisition and design. We no longer can afford to design systems without considering the full impact that systems will have in the joint battlefield or on the ability of battle groups and amphibious ready groups to operate and conduct realistic fleet training at sea or ashore.



▲ We no longer can afford to design systems without considering the full impact that systems will have in the joint battlefield or on the ability of battle groups and amphibious ready groups to operate and conduct realistic fleet training at sea or ashore. (PH1 Daniel E. Smith/USN)

We no longer can fix equipment deficiencies, or system problems with people, or piece-meal training systems and programs. When a system is introduced into the fleet, it must include a full training package, including mission-area training. Significantly, we must institutionalize human-system integration and human-centered design in the acquisition and design process. Finally, all of these actions are applicable to all warfare areas—theater air, undersea, surface, expeditionary and mine—not just land attack. Expanding this mission approach to all warfare areas should be pursued with energy and urgency to ensure the Surface Navy builds and maintains ships, systems, and valuable precision and lethal weapons, which are manned and operated by well-trained and tactically proficient Sailors, on call and ready to execute at the direction of the joint force commander.

Editor's note: CAPT Lloyd Swift is Surface and Amphibious Branch Head for Readiness, Training and Manpower Branch, N859/N869.



21ST

CENTURY SHIP MAINTENANCE

by Kenneth S. Jacobs and
CDR William McCarthy

As the clock ticked down toward Jan. 1, 2000, we were bombarded with retrospective views of the previous millennium, especially the 20th century.

LESS CAN BE MORE

Lengthy lists of the best athlete, best entertainer, best automobile and best "you-name-it" filled every newspaper, magazine, television show and Web page. Now that we have passed the new millennium milestone, the media has shifted its attention from remembering the past to looking at the future and speculating on what new advances to expect in the 21st century. The Surface Navy has been planning for the 21st century for some time and has recognized that we must revise our current processes now to accommodate technological advances and new ship configurations. During the past two years, Navy leadership has expended considerable effort conducting a comprehensive review of administrative programs, instructions, and inspections and assisting visit requirements that affect fleet Sailors. Significant changes in the way we do business include:

- Eliminating more than 20 inspections and consolidating another 72;
- Shrinking from 26 to 16 weeks the inter-deployment training cycle (IDTC) basic training phase; and
- Slashing 95 percent of the Navy's oil-analysis program sampling requirements for nonnuclear ships.

Although these initiatives improved the IDTC schedule and shipboard quality of life, the CNO's Surface Warfare Division (N86) and Commander Naval Sea Systems Command Fleet Maintenance Policy and Process Program (SEA04M) recognized that there was more that must be done.

Shaping the Navy After Next

OPNAV N86 and SEA04M realized that to begin shaping the "Navy After Next," we needed to revise and improve processes and tools used to maintain our systems and our ships. The Navy needed to address maintenance practices and policies with the same rigorous and methodological approach used in design, acquisition and other technical areas.

During the past two years, N86 and SEA04M have applied an engineering maintenance perspective to improve the maintenance system, which today has resulted in reduced scheduled maintenance requirements and more precise maintenance planning.

One of the most successful maintenance-improvement initiatives is the Surface-Ship Maintenance-Effectiveness Review (SURFMER) program. Several years ago, SEA04M streamlined reliability-centered maintenance (RCM)-based methods to improve preventive maintenance programs. A prototype of the so-called RCM-backfit methodology was applied to the USS *Yorktown*'s (CG 48) Planned Maintenance System (PMS) package as part of the Smart Ship program. The result: more than a 46-percent reduction in the ship's PMS workload. Further, the reduction in maintenance actions had no adverse impact on safety, mission, or the environment.

Because of its success, SEA04M revised the process in 1997 and began using it on major surface-ship systems as the SURFMER program. SURFMER incorporates a team of in-service engineers (technical-equipment design-experts) and fleet Sailors (equipment operational and maintenance experts) to test scheduled maintenance requirements using RCM principles. The objective in SURFMER is to determine if the maintenance requirements truly benefit the hardware and if they are worth doing. If the specified maintenance requirements do not benefit the hardware, or are not worth doing, they are either modified or eliminated. From Force Revision (FR) 1-97 through FR 1-00, approximately 65 percent of all surface shipboard PMS requirements have been reviewed, resulting in a 34 percent reduction in PMS man-hours.

Last October, hazardous material (HAZMAT) tool and equipment-calibration requirements were added to SURFMER. The goal of this revision was to minimize HAZMAT use and waste,



▲ Shipboard training-enhancement programs courses are being developed to train shipboard-maintenance technicians, work-center supervisors and more senior maintenance decision-makers in CBM and RCM terminologies, principles and fundamentals.

and to ensure excessive calibration requirements are not imposed. This ensured that only those tools contributing to the most efficient task accomplishment are listed. Furthermore, as each MRC is evaluated, a statement is added to explain the relevance of the maintenance requirement.

Training Shipboard Maintenance Decision-Makers

Training is essential to ensure that shipboard maintenance decision-makers understand the philosophy and methods to be applied when making engineering maintenance choices.

One example of engineering maintenance training, conducted for more than two years during the first two days of every SURFMER session, is 'just-in-time'

training on RCM principles and applications before evaluating system maintenance requirements. This training for in-service engineers and Sailors has been instrumental in ensuring that everyone has an understanding of basic maintenance principles and the "backfit RCM" process, and uses this repeated, engineered and disciplined process in evaluating PMS requirements.

Surface Warfare Officer School has incorporated condition-based maintenance and RCM principles in every course's maintenance curriculum—from prospective commanding officer through division officer.

At the Engineering Duty Officer School Basic Course in Port Hueneme, Calif., students have been provided a

➤ The Surface Navy has been planning for the 21st century for some time and has recognized that we must revise our current processes *now* to accommodate technological advances and new ship configurations. (USN)

foundation in maintenance engineering through instruction in basic maintenance definitions, principles and RCM fundamentals for more than eight years.

Training in engineering maintenance fundamentals will be incorporated next year in enlisted core-courses. In addition, three shipboard training-enhancement programs courses are being developed to train shipboard-maintenance technicians, work-center supervisors and more senior maintenance decision-makers in CBM- and RCM-terminologies, principles and fundamentals. These courses will supplement the core-curriculum, be available for Sailors that do not attend technical training following boot camp, and provide a review for enlisted and officers who want to brush-up or improve their understanding of engineering maintenance fundamentals.



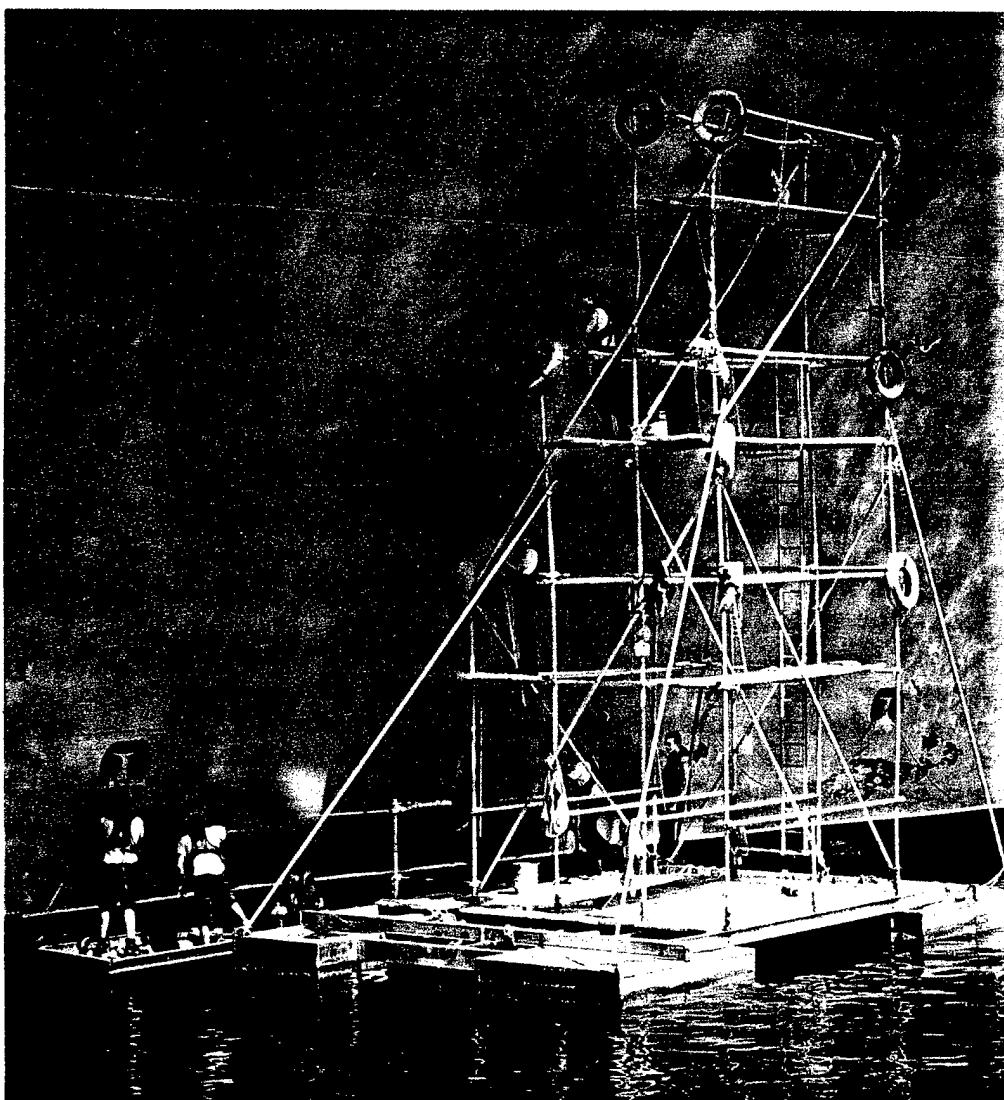
Labor-Saving Initiatives for the Waterfront Sailor

What improvements are being made in the day-to-day life of the waterfront Sailor? Plenty. Contractor preservation teams are at work under a test program in 12 cruiser-destroyer ships in Norfolk and three amphibious ships in San Diego.

Each ship in the test program is allotted a team of 25-35 contractor personnel and approximately 30 days of preservation work. Based on fleet feedback following the test period, the contractor preservation team program may be expanded to all ships and homeports during the next two years. In addition to contractor personnel performing the preservation work, new state-of-the-art coatings and coverings now are being used. Some of the new preservatives being tested turn "running rust" clear, reducing one of the most time-consuming rework items Sailors face. Additionally, coatings with higher durability (up to 10 years) and with greater adhesion qualities are being evaluated. OPNAV, TYCOM and NAVSEA goals are to reduce the time and money spent painting ships and, when preservation work does need to be performed, to remove the paintbrush from the Sailor's hand when a ship is in port.

Cleaning and maintaining each sanitary space on a ship may require up to two Sailors working full time. If the time and effort expended to keep a sanitary space clean could be reduced, not only would all shipboard Sailors benefit from that improvement by having a cleaner and more available sanitary space, but also the Sailors assigned to clean the heads could be assigned more meaningful tasks.

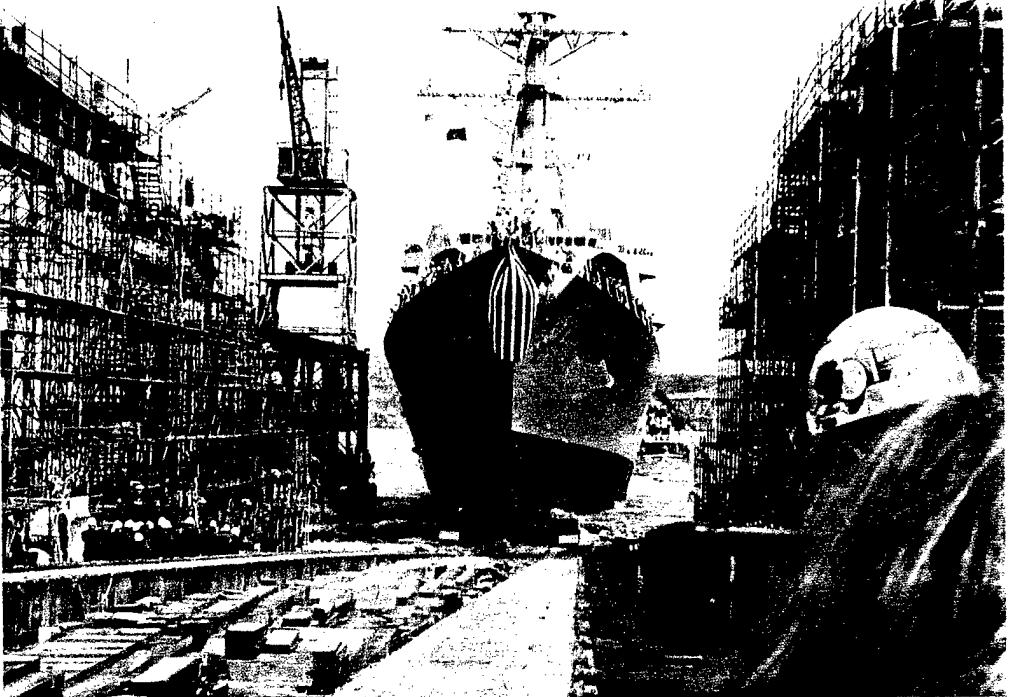
◀ Based on fleet feedback following the test period, the contractor preservation team program may be expanded to all ships and homeports during the next two years. Some of the new preservatives being tested turn "running rust" clear, reducing one of the most time-consuming rework items Sailors face. (USN)



► To maintain ships operationally ready to meet the increasing demands required of our fleet Sailors, we must eliminate unnecessary tasks and become more efficient in completing those tasks that must be performed. (USN)

The Navy is currently testing a new shipboard sanitary space design that will dramatically reduce the time necessary to make heads "inspection ready." The new design enters a second phase of testing when installations in USS *Rushmore* (LSD 47) and USS *Detroit* (AOE 4) are completed later this year. The "head of the future" features stainless steel vanity-style (vice individual) sinks and stainless steel shower surfaces, urinals and toilets. Other design changes include reducing angle irons and sink moldings that are difficult to keep clean, and using toilet and shower partitions, hung from the overhead (vice fastened to the deck), to reduce mounting fixture corrosion and promote easier deck cleaning.

Other labor-saving initiatives being pursued include in-line lubricating oil-



COMNAVSURFLANT and COMNAVSURFPAC, to program for future ship-availability requirements. MRS uses the condition-based, integrated fleet

defensible methodology to availability programming. It allows OPNAV and both surface type-commanders to evaluate the risk associated with reducing industrial maintenance resources by tying the impact of underfunding maintenance to a ship's specific mission-area readiness. Further, by aiding the effort to properly fund maintenance, MRS directly supports the type commander's efforts to implement condition-based maintenance and continuous maintenance—programs that contribute to lower maintenance costs, higher ship availability to respond to world-crisis tasking, increased readiness for operational commanders,

The maintenance improvement initiatives OPNAV and NAVSEA are pursuing started with inputs from fleet Sailors who are living with today's maintenance systems and processes.

analysis systems that could eliminate the need to perform "clear and bright" samples fleetwide; new pump mechanical and cartridge seals that are more reliable, more durable and easier to install; and a new, reduced-maintenance watertight door.

Advances also are being made in the industrial-maintenance area. To keep the current fleet of ships operational until they can be replaced with the new ships now on the drawing boards (e.g., DD 21 and LPD 17) we need to make the most effective use of our maintenance dollars. The Maintenance Requirement System (MRS), a new maintenance-availability programming tool developed by SEA04M, will be implemented this year in the Surface Navy, with the support of

maintenance process to budget for industrial-level maintenance, ensuring CBM requirements are addressed. MRS applies an accurate, believable, complete and





▲ To keep the current fleet of ships operational until they can be replaced with the new ships now on the drawing boards we need to make the most effective use of our maintenance dollars. (PH2 Jim Vldrine/USN)

and better Sailor quality of life through shorter availability periods.

Both the CNO's Surface Warfare Division and NAVSEA have recognized that the Navy's 21st-century maintenance resources (e.g., personnel, supplies and money) will be limited. To maintain ships operationally ready to meet the increasing demands required of our fleet Sailors, we must eliminate unnecessary tasks and become more efficient in completing those tasks that must be performed. The maintenance improvement initiatives OPNAV and NAVSEA are pursuing started with inputs from fleet Sailors who are living with today's maintenance systems and processes.

► A prototype of the so-called RCM-backfit methodology was applied to the USS *Yorktown* (CG 48). (USN)

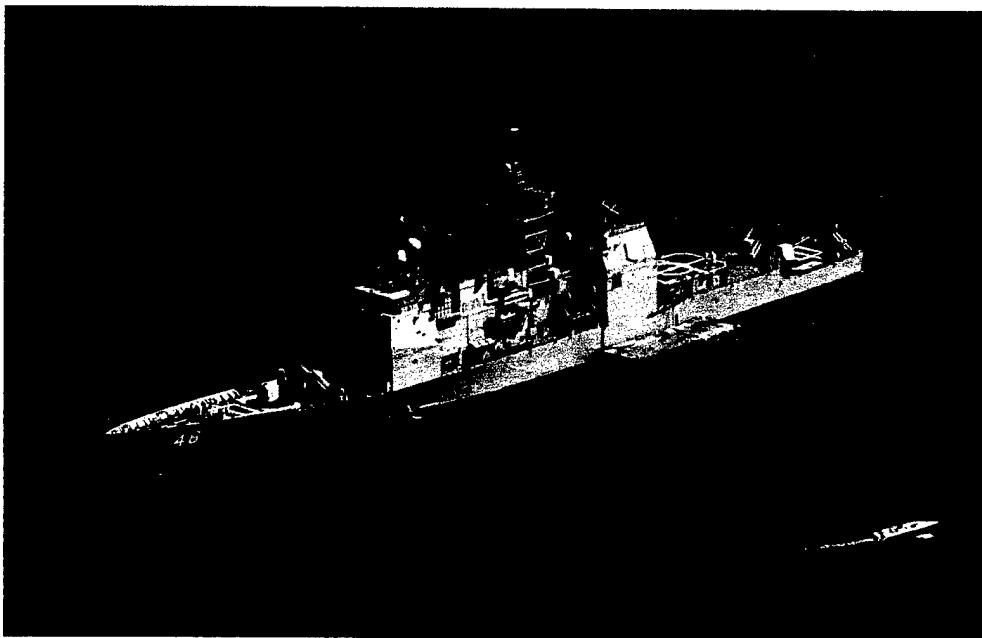
"I believe that the naval service will be of increased importance and relevance to the American people in the 21st century. Shaping that 'Navy After Next' is the challenge we must all meet."

— ADM Jay Johnson, Chief of Naval Operations

By partnering with the Sailors living with today's maintenance systems and processes we can continue to make the corrections and improvements needed to support the "Navy After Next."

Editors note: CDR William McCarthy is head of the Fleet Readiness Section in N869. Mr. Ken Jacobs is Director, Maintenance Engineering Policy and Knowledge Transfer Division (SEA04M1). Visit the SEA04M Web Page at <http://maintenance.navsea.navy.mil>.

Fleet assistance and participation in the maintenance-improvement process is critical to ensure that we use our limited maintenance resources wisely to maintain the highest readiness condition, while reducing unnecessary maintenance tasks.





Interoperability Through Commonality

Producing a Joint Family of Integrated Combat Direction Systems and Weapons

by CDR Robert S. Kerno Jr.
and Michael D. Roberts

There is an urgent requirement to deploy an advanced, fully integrated, and common combat direction system aboard naval ships. This system must be capable of rapidly defending against antiship cruise missiles (ASCMs) and protection of our joint forces ashore against tactical ballistic missiles (TBMs), airborne aircraft threats and directing Naval Surface Fire Support.

The need is compelling: More than 70 nations possess ASCMs and at least 25 possess TBMs. These ASCMs are becoming cheaper, are increasingly becoming more lethal and are proliferating throughout Third World nations. A single integrated air picture (SIAP), established through a family of common integrated combat direction systems, is necessary to achieve the overarching goal of joint theater air dominance. Only a complete and accurate SIAP, enabled by a common computing architecture, will supply the fidelity required to create the requisite situational awareness.

The Navy and Marine Corps team and their complementary operational concepts codified in *"Forward ... From the Sea"* and *"Operational Maneuver From the Sea"* articulate the overarching requirements for operating in the littoral. Nearland operations are inherently more dangerous than blue-water operations because warning and reaction times are dramatically compressed. Combat systems and sensors, most of which were developed in the 1970s and 1980s, were optimized for open-ocean operations. The littoral environment presents unique technical, as well as operational, challenges as our combat systems, which were designed to operate



optimally in a platform-centric manner, are increasingly employed within the joint family of systems where interoperability is prerequisite to achieving operational primacy.

Our challenge is to produce a joint family of integrated combat direction systems and weapons that can interoperate in the difficult littoral environment under the most stressful scenarios.

Improving the Battle Force's Capabilities

There are several major initiatives underway to improve the battle force offensive and defensive capabilities. The cooperative engagement capability (CEC), AN/SPY-1D(V), area air defense commander (AADC) capability, and the SM-2 Block IIIB are new capabilities being engineered and fielded to meet the demands of the joint warfighter to *engage* and *win* in the battlespace in the 21st century.

Recent events in the fleet and elsewhere have captured the attention of the senior leadership within the Departments of the Navy and Defense, which require an alteration in the manner in which we design, test, and field next-generation combat direction systems. While there are many reasons to re-examine the manner in which we acquire combat systems, they can be crystallized to three underlying factors necessitating a fundamental change in the acquisition process.

The first is *cost*. Each of these combat system elements and capabilities carries with it a substantial cost that the Navy no longer can afford. In an era characterized by declining budgets, the Navy and the other services no longer dictate the state-of-the-art in technology. Because of *acquisition reform*, driven in large part by the need to increase efficiency and savings, the joint community has adopted industry standards as part of the combat system design and acquisition process. A collateral benefit of this reformation is

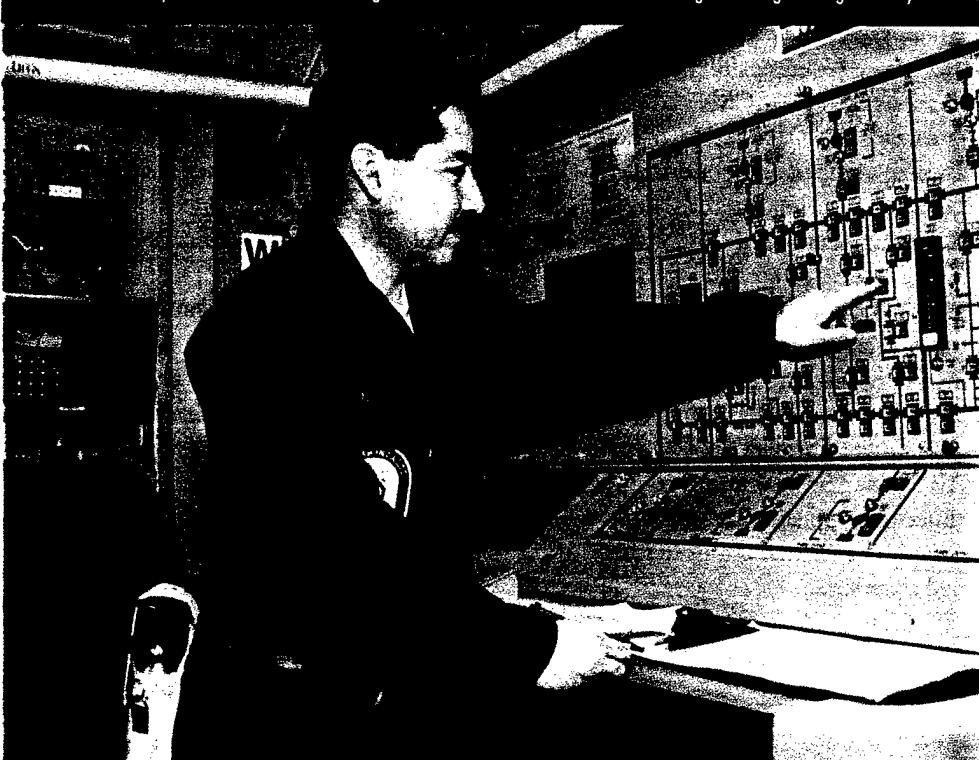
the ability to rapidly update or refresh technology as the state-of-the-art progresses. For example, the Navy need not be tethered to AN/UYK-7 computing technology, which pales in comparison to even the most basic desktop processor.

This leads directly to the second underlying factor of *technology refresh*. Through careful planning and designing, and by using processes such as object-oriented analysis and design, the services can design software that is relatively hardware-independent. This obviates the need to replace combat suites (hardware) in their entirety and the associated costs that accompany the replacement. Should software require updating to ensure compatibility with the new hardware, only the affected objects would require modification. Alternately, as new functionality is added, new objects could be coded, which would satisfy the new operational requirements.

The last factor is *opportunity*. The Navy has put 27 *Ticonderoga*-class

SM-1 firing from USS *Antietam* (CG 54) (USN)

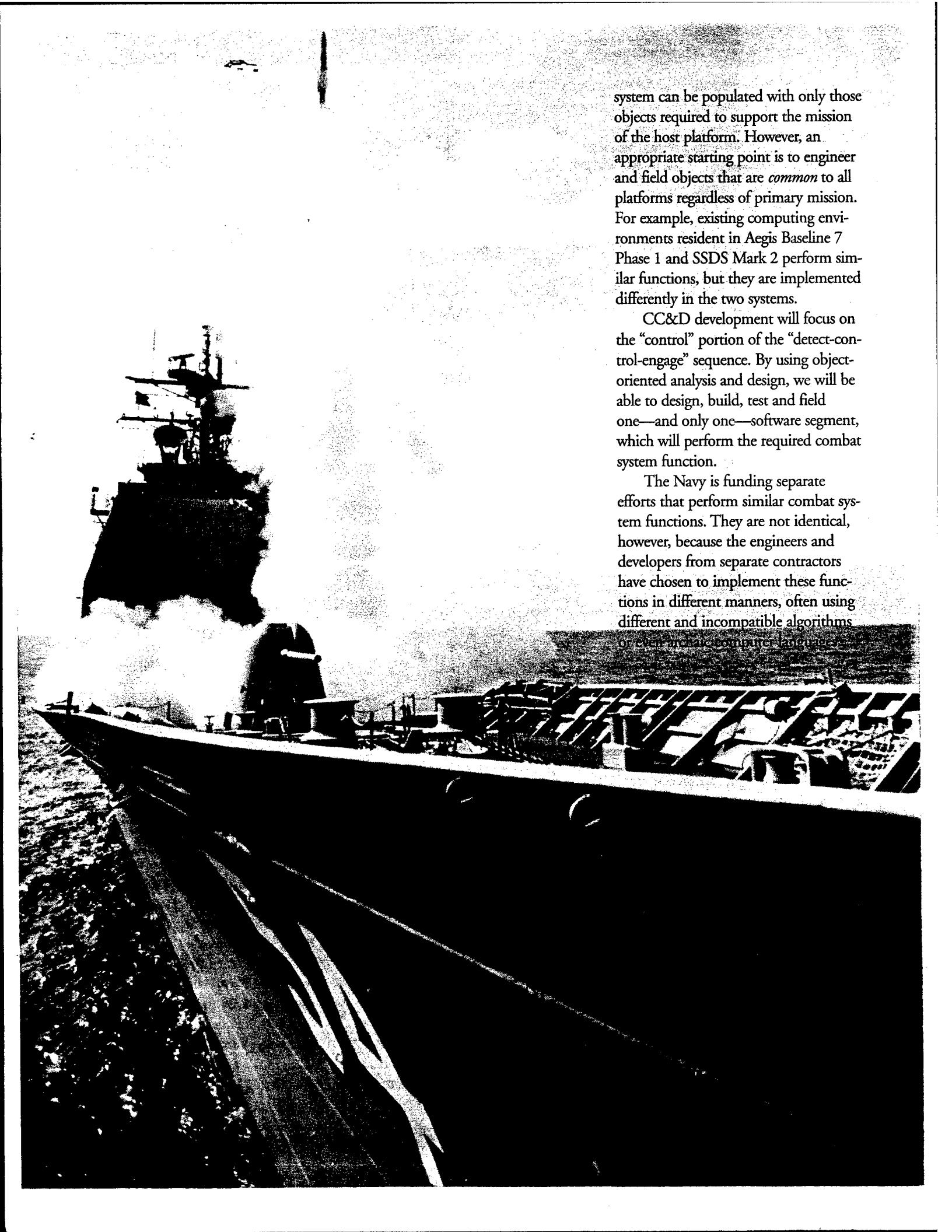
Fleet input from Sailors is becoming more and more instrumental in the design and engineering of today's fleet combat systems. (PH3 Todd Linard/USN)



Aegis cruisers to sea and is currently building and deploying the *Arleigh Burke*-class Aegis destroyers. Now is the time for the Navy to articulate the requirements for the next generation of surface combatants and aircraft carriers —DD 21 and CVN(X), respectively. Chief among these requirements is cost-effectiveness and support of rapid upgrades.

Focusing on "Commonality"

Rather than maintaining several separate systems with capabilities tailored to specific missions and platforms, a *common command and decision* (CC&D)

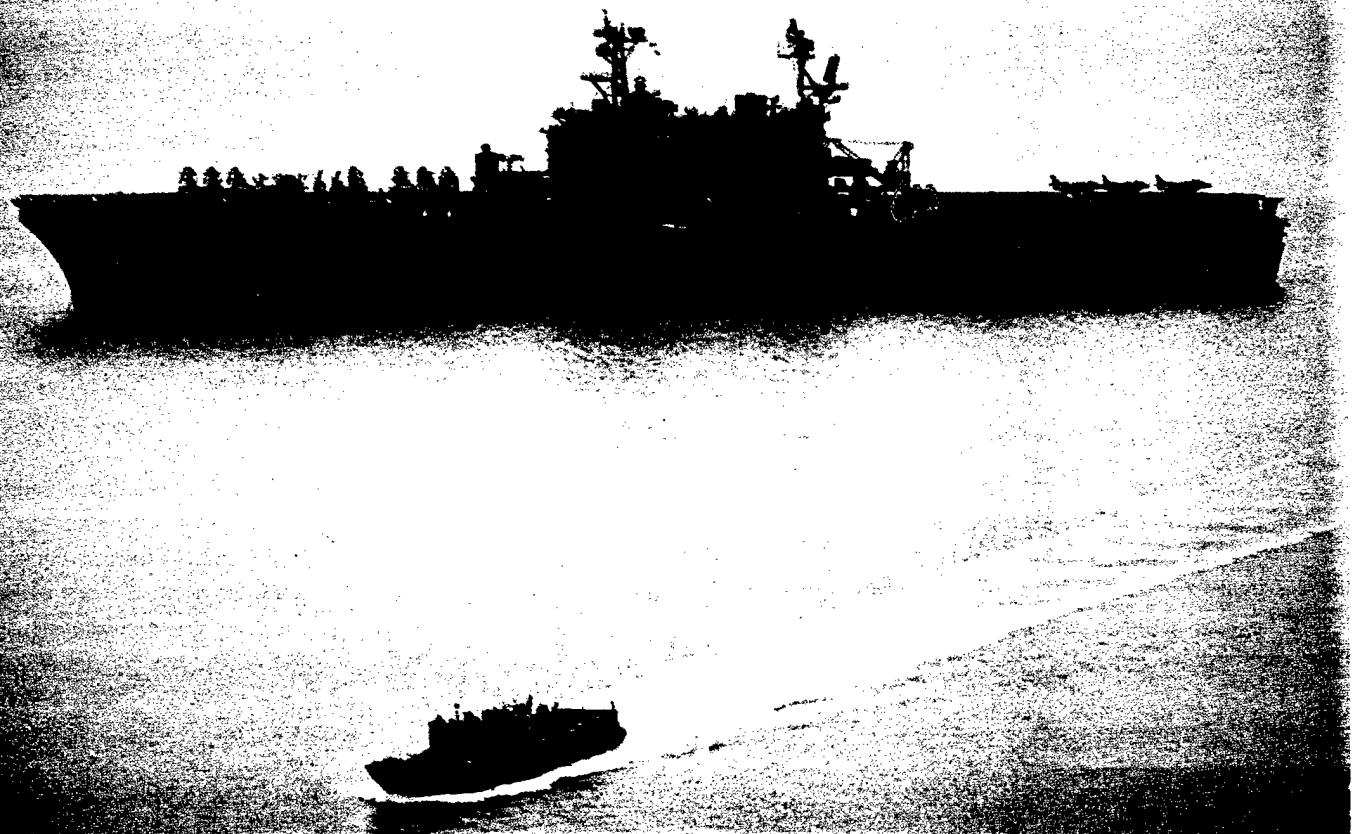


system can be populated with only those objects required to support the mission of the host platform. However, an appropriate starting point is to engineer and field objects that are *common* to all platforms regardless of primary mission. For example, existing computing environments resident in Aegis Baseline 7 Phase 1 and SSDS Mark 2 perform similar functions, but they are implemented differently in the two systems.

CC&D development will focus on the "control" portion of the "detect-control-engage" sequence. By using object-oriented analysis and design, we will be able to design, build, test and field one—and only one—software segment, which will perform the required combat system function.

The Navy is funding separate efforts that perform similar combat system functions. They are not identical, however, because the engineers and developers from separate contractors have chosen to implement these functions in different manners, often using different and incompatible algorithms.

Object-oriented computer languages



Rather than maintaining several separate systems with capabilities and decision (CC&D) system can be populated with only those

When we field new capabilities, such as the Advanced Integrated Electronic Warfare System, the extended range-guided munition and the cooperative engagement capability, the Navy must pay to integrate them with each of the individual combat systems. This has a multiplicative effect because the Navy pays for it four times: First for development; second, for integration (and associated re-engineering and re-design if required); third, for the testing and validation; and fourth, for the continued logistics support and accompanying overhead.

This approach has proven cumbersome, cost-prohibitive and has failed to guarantee interoperability.

What is CC&D?

CC&D consists of a set of computer programs (middleware and components) that perform command and decision functions within a common architecture. The benefits offered by proceeding along this course will result in dramatic savings and a vast reduction in the interoperability problems currently experienced in the fleet. Because of its focus on commonality, CC&D mitigates interoperability prob-

lems that result because we have implemented similar, or even identical, functionality differently in our array of combat systems.

However, it is noteworthy that CC&D does not represent the start of yet another program. Rather, it is an evolution of both Aegis and the Ship Self-Defense System (SSDS) Mark 2. As a pre-planned product improvement, the Navy will examine existing operational requirements documents for common functions across the spectrum of existing combat systems and fold these into a cornerstone requirements document. This document will literally

become the "cornerstone" of the foundation upon which CC&D will be designed, engineered and fielded.

Command and decision functions associated with ACDS, SSDS and the Aegis Combat System will be compiled and a determination made as to what functions must be common, which will be based on the capstone requirements. The next step will be to determine the boundary of each of these functions: deciding which will reside in the control portion, those that will reside elsewhere and engineering the enabling interface for the detect and engage functions. The three elements of the detect-control-engage sequence then will be integrated within a common combat systems architecture.

CC&D Conceptual Architecture

Common core functionality may consist of common air control, track management and identification functions. However, what is not yet apparent

in their entirety because of the inability of the computing hardware to keep pace with the demand for increasing combat system capability.

The key to the CC&D strategy is development of a library of common applications. As an operational requirement is transformed into an operational capability, a developer can, under the direction of the appropriate program manager, pick up the interface specifications and develop the interface between the new capability and

CC&D. This interface and the associated capability would, in turn, undergo component testing in an engineering and manufacturing development model for interface verification. Interoperability problems, if any, would be detected early in the acquisition process and engineered out of the capability well before fleet introduction.

Central to the CC&D effort is examining current combat systems to identify where combat systems development can

Elevating Systems Engineering to a Higher Level

The Navy has had great success in fielding the most advanced maritime combat systems in the world. We possess capability far greater than any potential adversary does now or will have in the near future. We must take advantage of the current political and military climate to elevate systems engineering to a higher level and achieve interoperability across our battle groups and with joint, allied and coalition forces. Technology and software represented by the common command and decision system are in development now.

The CC&D program was established in Fiscal Year 99 as part of Program Review 2001 and is currently funded for an Initial Operational Capability in FY2010. However, rather than continue with the current

"stovepipe" efforts, the Navy has a unique opportunity to leverage existing commercial off-the-shelf technology and incorporate it into the embryonic CC&D development effort as early as FY2005.

This is the time to conduct a thorough examination of how we will improve our system engineering and integration, in the most efficient manner, to achieve the level of performance and interoperability demanded by the future operating environment.

Editor's note: CDR Robert S. Kerno Jr. is BMC41 Head for Theater Air Warfare, N865. Michael Roberts is program manager for CC & D PMS468.

“Flight Quarters, Flight Quarters. All Hands man your flight quarters' stations to launch Battle Cat 23”

Refining the Flight Quarters' Process

Imagine that you are in the eastern Mediterranean. It is 0530, and you are underway on DD 21—the Navy's new land-attack destroyer. Word is passed over the personnel communication circuit for the eight Sailors assigned to flight quarters, not the 1MC as was done in the past.

BM2(SW) Cruiser, the landing signal enlisted (LSE), knew flight quarters would occur before reveille and that he would have to get up early for breakfast. Since he is a day worker, as everyone else is on the flight quarters team, he hit his rack early, spending a little less time working on his interactive college course.

The landing signal officer (LSO), LT Angels, is a SH-60R helo second pilot and one of six pilots in the detachment assigned to DD 21. This is

her first assignment on board, and she is happy for additional responsibilities that exceeded her LSO duties on board USS *Cowpens* (CG 63). She not only is responsible for operating the advanced recovery, assist and traverse (RAST) system, but also for the advanced flight deck fire-fighting systems. Part of her responsibilities include maintaining communications with the foam director, DCFN Patch, the helo-hanger scene-leader, DC1 Hangar, and the engineering officer of the watch (EOOW). She also assumes helicopter operations from the antisubmarine aircraft controller (ASAC) via a tower-mounted camera. A week-long DD 21 LSO course, along with an interactive course that provided her with “real-time” underway experience, helped her requalify as LSO.

HM1(SW/AW) Cure, the ship's independent duty corpsman (IDC), is notified of flight quarters on his personnel communications system and responds to the call while finishing



Based on years of testing, NRL has stated that the fixed AFFF system and a single hose team can easily control a fuel fire on the flight deck. This would effectively eliminate the need for both the second hose team and background assistance team and reduce flight quarters manning by eight people. (PHOTO: Jerry Casper/USN)



his breakfast. He continues his normal morning routine knowing that, if called, he could be in the helo hangar in less than 30 seconds. The emergency medical kit is staged in the hangar, and he is confident of its readiness since he saw the kit's tamper seal still in place yesterday as he passed through on his way to PT.

The boat coxswain, BM3(SW) Tiller, and rescue swimmer, BMSN Shark, after reporting for daily muster, check the communication circuit. BMSN Shark stages his wet suit, and BM3 Tiller does a pre-operational check of the boat-deck doors and launch system.

BM3 Tiller continues to be impressed with the simplicity of the BLS (Boat Launching System). Once the bridge permissive button is released, he simply starts the engine, pushes a button to open the door, and before he knows it, he is darting from the ship and into the seas. Although boat recovery requires three Sailors to

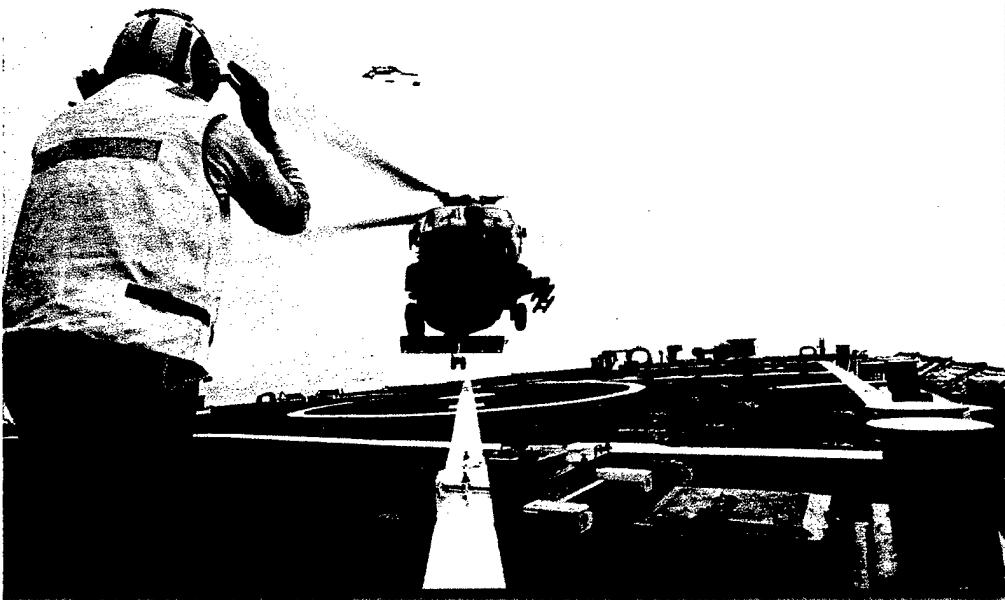
perform, the entire operation is considerably easier than his experience with the RHIB davit on the DDG. Since he is in charge of the boats for the deck division, he is very happy that the boat is stowed inside the ship and is not subject to corrosion and weather.

The engineering officer of the watch, GSEC Allison, reviews the central-control's checklist screen. When yesterday's workday ended, the "oil king" sampled and topped off the helo service tanks. These tanks, which are designed to endure two days of flight operations with two aircraft, are highly segregated and made with special coatings that prevent any contamination. He knew that last night's flight ops would hardly put a dent into the JP-5 tank, and the green light on the tank level indicator and the automated checklist confirmed his belief.

The refueling station on the flight deck is self-service. The detachment aircrew only has to push a button to recirculate the fuel until the automati-

ed in-line fuel sensors indicate satisfactory. The readout, which remains green throughout the fueling evolution, is given to central control and the LSO station. In addition, it is available to the cockpit via data link. A lighted, transparent section, built into the recirculation line, allows the pilots to personally inspect the quality of the fuel.

The automated checklist is green, verifying the engineering plant's configuration for flight quarters. This includes readouts on the AFFF tank level and bit test results, for the helo fire-fighting monitor and flight-deck sprinkling systems. The monitor indicates a go for all flight-deck lighting and all electro-optical landing-aids systems. The engineering department is ready. Chief Allison, the EOOW, touches his screen to confirm engineering readiness, which is indicated immediately on the master checklist in the pilothouse and the multi-modal watch station in CIC.



Joining the night-check crew in the hangar now is BMC (SW) Keel and six of his shipmates. He is the flight-deck crew supervisor and on-scene leader. He supervises the LSE, tie-down crew, the two crash and salvage crew members and the nozzleman. Chief Keel is in direct communications with the LSO, LSE and the nozzleman. His crew, all day workers, is well rested, even after completing a recovery last night at 2200. Each of the fire crew has a voice-activated radio in his cranial, providing constant communication with the chief.

As soon as the two back-up hoses are "staged" and communications are verified, the chief indicates green on his automated checklist, which is relayed instantaneously to the pilot house and the multimodal watch station in CIC. Although flight quarters will put a

dent in his morning routine, the chief is happy that only six of his shipmates are needed to support flight quarters, unlike his days as flight-deck crewman in the late 1990s. His team is well trained to handle any casualty.

On the bridge, the officer of the deck, LTJG Lumens, is monitoring the progress on the flight quarters' checklist. All personnel have either acknowledged or reported on station, as required by the helo operations bill. Each step is automatically entered on the touch-screen checklist, so all the OOD has to do is observe the "reports" when they come in. Normally, preflight checks take less than ten minutes from notification to the flight deck team's FOD walk-down. The FOD walk-down, the most time-consuming task, is usually completed quickly because of the efficient design of the ship's weather

► By analyzing all aspects of aviation operations on aviation-capable ships, we will be able to recommend a safe, rational and optimum aviation-operations manning posture. As a result, the manning of flight quarters stations presents a challenge in designing future "optimally manned" ships, which, because of the smaller size of the crew, will preclude participation of such a large percentage of ship's personnel to assist in flight operations. (PH2 Neil Sheinbaum/USN)

decks. LTJG Lumens is tuned in to the flight quarters circuit and is conducting communication checks with the LSO, LSE, CIC, central control, scene leader, foam director and boat coxswain.

Launching and Recovering Aircraft at Sea

This futuristic view of flight quarters is provided to illustrate one of the Surface Navy's important capabilities: the ability to safely launch and recover aircraft at sea. This example also shows the coordination, training and manning that will be required on our future ships. The manning objective for DD 21—95 personnel, including the air detachment—requires changing the way we do business on our future ships. To meet future warfare demands, DD 21 and other ships' design must employ "optimal manning" techniques.

Optimal manning ensures ships will be manned with the right number of personnel—no more and no less. The ship is built from the keel up using human-centered design to ensure efficient use of Sailors, instead of using them to solve every problem, or crew every new system that is added.

The current situation, however, traces its roots to a past that is much different from our vision of the future. Ever since the early 1960s, aviation operations have been conducted on non-aviation ships—combatant, amphibious and logistic ships—requiring the ship's company to conduct aviation operations in addition to their primary duties. As the surface combatant fleet evolved from the drone antisubmarine helicopter to the SH-2, operations grew in complexity and duration. In addition, safety

► The Navy is continually striving to refine the flight quarters process. Several policy changes and improvements have occurred in the last decade, which have lessened both the frequency and severity of fleet mishaps. During the 1990s, the Navy experienced 12 class A mishaps involving aircraft striking surface combatants. In each case, there were no fires. (PH2 Clarence F. Arnold/USN)



► One of the Surface Navy's important capabilities is the ability to safely launch and recover aircraft at sea. (PHAN Joseph Strevel/USN)

requirements evolved, requiring an increase in the manpower needed for flight quarters. Simultaneously, manpower resources dwindled. On today's surface combatants, flight quarters can be called 24 hours a day, seven days a week, and can result in as many as 50 personnel leaving their assigned duties in support of flight quarters.

As a result, the manning of flight quarters stations presents a challenge in designing future "optimally manned" ships, which, because of the smaller size of the crew, will preclude participation of such a large percentage of ship's personnel to assist in flight operations. Additionally, many lessons learned and applications designed for future ships can be back-fitted to the active fleet, thereby reducing the over-tasking that currently exists.

The Navy is continually striving to refine the flight quarters process. Several policy changes and improvements have occurred in the last decade, which have lessened both the frequency and severity of fleet mishaps. During the 1990s, the Navy experienced 12 class A mishaps involving aircraft striking surface combatants. In each case, there were no fires. There were only four injuries requiring first aid or IDC treatment and subsequent evacuation. The boat crew was required for rescue in two cases. This data, provided by the Naval Safety Center, suggests that the three hose teams required by current directives may not be required for every flight quarters' detail. The Royal Navy, for instance, breaks flight quarters into three categories: normal, priority and emergency. The flight quarters' collateral duty is now the subject of close examination for potential technological and process improvements to reduce manpower costs and extra workload requirements.

The current surface ship response to flight quarters is shaped by physical factors, administrative requirements and fleet training. The administrative requirements are almost endless, including a myriad of instructions, notices, bulletins, naval warfare publications, NATOPS and standard operating procedures. In addition, ships are subject to inspection and certification checklists, as well as the long lists of personnel qualifica-

tion requirements. The final and most subjective element shaping the response is evolving experience. This has resulted in more requirements added by commands and higher authorities, which require additional personnel. Often, these requirements, some of which are based on anecdotal incidents and sea stories, are piled one on top of another with little "system" analysis or human-systems integration. Given the numerous requirements, it is no surprise that flight quarters' manning differs from ship to ship, even within the same class.

Current directives require 48 people to stand-by on an air-capable combatant. The number can be increased by local authority and is typically reduced by ships with an air-detachment board. When flight quarters are called, personnel not on watch respond. This does not mean personnel off the watchbill, but personnel off watch. This may mean a Sailor who was off watch for a few hours will have to perform flight quarters' duties during the period when he or she should be resting for the next watch.

Positions can be divided into two categories: *functional* or *emergency*. Functional positions are those that have duties to perform during every aviation evolution such as HCO, LSE, tie-down crew or fueling team. Emergency positions—fire-fighting and medical personnel and a rescue boat and davit crew—are standing by in case of a mishap. Some ships require equipment technicians to stand-by should something break. Personnel on watch—the officer of the deck, signalman, radioman, CIC, BWOW, EOOW—also act in support of flight quarters. A ship instruction, or a helicopter operations bill, dictates how the ship responds. Some ships have created watch stations that are beyond all written requirements.

When future optimally manned ships enter the fleet, the current flight quarters' response will be both unsupportable and unacceptable. By applying process-improvement, operational risk-management and future and current technologies, we will be able to reach our goal of a 95-member crew on DD 21.



Modeling the Flight Quarter's Team From Foreign Navies

Foreign navies have been operating flight quarters at reduced manning levels for years. During normal operations, the Royal Navy operates with only seven people on station. They have additional watchbills for priority and emergency landings that include additional personnel, depending on the situation. The Canadian Navy operates normal flight quarters with 14 personnel (eight from the ship's company and an additional six from the air department). Along with the Royal Navy, the Canadian Navy also has a separate watchbill for emergency flight quarters. The Royal Netherlands Navy uses nine people—five of whom are from the air detachment for flight quarters.

These navies have conducted safe flight quarters for years and can serve as models for reducing our manning levels. Beginning with the crash and salvage team, hose teams could be reduced from four to three people. The third member of the hose team could function as the plugman to activate the station and assist handling the hose as it is deployed. The first hose team could be composed of dedicated fire fighters standing by for flight quarters evolutions. The second hose team may be composed of members of the flight-deck crew, such as the chock/chainmen, LSE, fuel-team members, etc., as long as they are properly trained, qualified, and have their fire-fighting gear staged for rapid response.



The background-assistance team, which is the third hose team, responds only in emergency flight quarters, or upon activation of the helo crash alarm. Background assistance team members must be identified on the ship's watchbill by name and are graduates of aircraft fire-fighting school and team training. The background assistance team may be delegated to air-detachment personnel who routinely work near the flight deck during flight operations.

The flight deck AFFF sprinkling system also is part of the ship's response to a fire. After an extensive review of all flight-deck fires and system testing during the past 25 years, the Naval Research Laboratory concluded that no doctrine has been established for integrating manual fire fighting with the use of the fixed flight-deck AFFF system.

There are no current instructions that address the system use on air-capable ships. Steps should be added to direct immediate activation of flight deck AFFF for any aircraft crash on board that results from a ruptured fuel bladder, or when a fuel spill fire is detected. Based on years of testing, NRL has stated that the fixed AFFF system and a single hose team can easily control a fuel fire on the flight deck. This would effectively eliminate the need for both the second hose team and background assistance team and reduce flight quarters manning by eight people.

Revamping Communications Structure

The requirement to establish and to maintain reliable communications remains. Most ships have modern and reliable portable communications systems. The deci-

◀ Recommendations from the working group included using "other" flight deck crewmembers to man the second hose team and steps to activate the flight deck AFFF sprinkling system. (CWO3 Seth Rossman/USN)

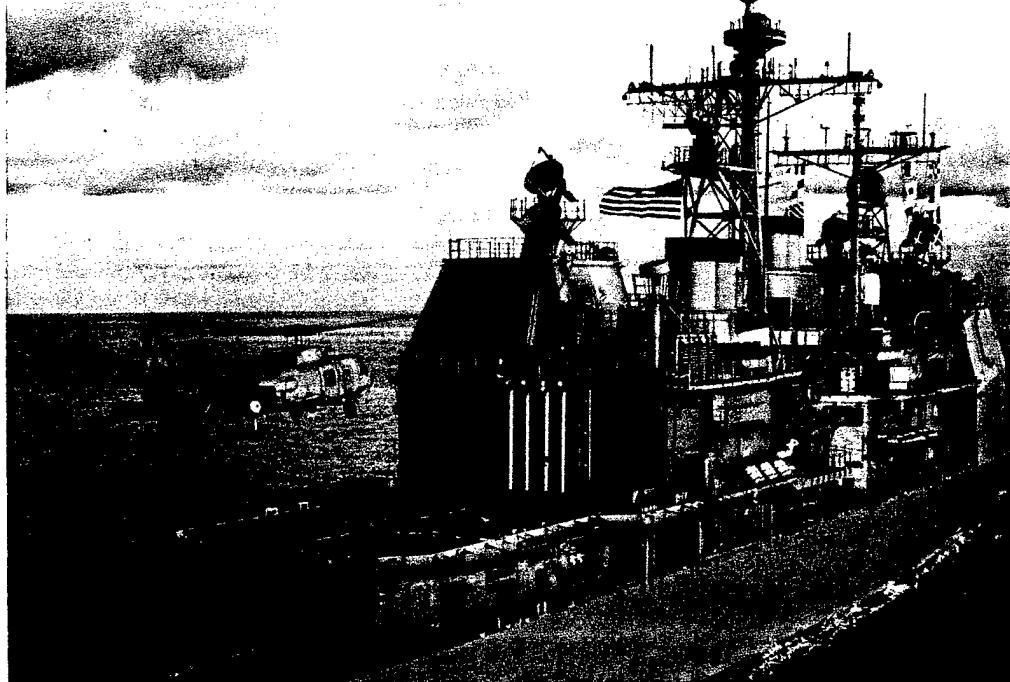
sion to station dedicated phone talkers should be left to the commanding officer, based on the ship's configuration. The only requirement should be to establish communications between primary control stations. Current directives also require manning the RAST room. The requirement could be eliminated because of the hazardous nature of the RAST room and advanced automation of the system.

Eliminating the requirement for hospital corpsman to be on the flight deck would allow the corpsman to continue with the daily routine. Corpsman on smaller air-capable ships can ensure sickbay, or another designated area, is staged for possible injuries during flight quarters, and continue their normal duties.

Further personnel reductions may be achieved by eliminating the AFFF station operator for normal flight quarters. The station would be manned only in an emergency during flight quarters, as is the case for all other shipboard emergencies. These changes reduce the crash and salvage party manning from a minimum of 20 personnel actively participating in flight quarters to a team of six dedicated personnel: the scene leader, a three-person hose team and two proximity-suit personnel. Additional designated personnel only would respond during an emergency.

The boat and davit crew is a significant drain on manpower when flight quarters is set. The current requirement is to have the boat crew on station at night for single helicopter operations and always on deck for deck-landing qualifications. The boat and davit crew could muster, could conduct a safety brief and could stage equipment at the first daily flight quarters, or more often if directed by the commanding officer. A properly trained and briefed crew would be able to respond to an emergency within minutes. The same procedure also could be used for ships in plane guard. Proper training is paramount to ensure the emergency response is rapid and safe.

◀ When future optimally manned ships enter the fleet, the current flight quarters' response will be both unsupportable and unacceptable.



Flight quarters manning must be consolidated into one centralized instruction.

— This will result in a single source for standard helicopter procedures.

Manning of the small boat could be reduced to three people: coxswain, swimmer/bowhook and engineer/sternhook. The assignment of a weapon-armed boat officer should be left up to the commanding officer, depending on the situation, and the training level of the crew. A minimum of seven personnel is currently needed for lowering the davit, although these requirements may vary by ship configuration and should be addressed in the davit technical manual. The requirement for a phone talker should be left to the commanding officer.

Fueling evolutions only should require three people: a pump-room operator, a station operator and a crew leader/nozzelman. A quality assurance sentry is required only for periodic sampling and defueling. The pump-room operator and station operator, however, are needed to establish communications. The conference (see sidebar) recommended stationing the fuel crew only when fueling evolutions are expected, not for every normal flight quarters. The only exception would be for the fuel team members, who are assigned to the second fire-fighting hose team.

Although there have been numerous technological improvements to both routine operations and emergency response procedures, few have been implemented. While the science and technology community continues to improve the effectiveness of their innovations, operators must be equally ready to accept them when installed. This will become even more critical with the arrival of new, optimally crewed, aviation-capable surface ships.

Training, Training and More Training

The underlying theme of all of these personnel reductions is training. A recurring comment from the subject-matter experts in the working group was "if I could count on the people being really well trained, I could better support personnel reductions." Ships typically respond to additional requirements by throwing more bodies at the problem. Adding more personnel to a hazardous environment, such as a ship's flight deck, to meet increased requirements actually increases the

risk in that environment. Reduced flight quarters manning will remove unnecessary workload from our Sailors. For the recommendations to be effective, however, training must be the highest priority. Zero-based reviews must be conducted to improve the training and certification that supports the personnel assigned.

Further reductions in fire-fighting personnel must go hand in hand with new tactics incorporating installed advanced systems, which are developed and proven. Advanced plans are being developed to pursue further reductions and support optimally manned ships. There are currently too many different directives on the street. Flight quarters manning must be consolidated into one centralized instruction. This will result in a single source for standard helicopter procedures.

By analyzing all aspects of aviation operations on aviation-capable ships, we will be

able to recommend a safe, rational and optimum aviation-operations manning posture. The Surface Navy has safely and effectively conducted aviation operations for more than 30 years by relying on ship's company support in a collateral duty capacity. Operations have grown in complexity and duration. As many as 50 personnel on a surface combatant and small deck amphib are required to support flight quarters in accordance with all governing directives. Looking to the future, and to the development of optimally manned ships (DD 21 and beyond), there will be no under-tasked billets that can support flight quarters as a collateral duty. The way we do business will no longer work on these future ships, and therefore, we must adapt to overcome future manning requirements.

Editor's note: CDR E. J. Fairbairn is the engineering/damage control head for Surface Warfare Training Requirements (N869T).

Working Group Reviews Fleet's Suggestions, Makes Recommendations

The Director of Surface Warfare (N86), with the assistance of COMNAVFLANT, chartered a working group in September 1999 to examine the issue and to develop recommendations. Approval authorities have analyzed the recommendations for the publications affected and will approve numerous changes. These changes, which will soon be introduced to the fleet, are the first step on the road to optimal manning of surface ships.

This working group included subject-matter experts from air and surface type commands, ATGs, NAVSEA, NAVAIR, OPNAV, ship and aircraft program offices, Navy Research Labs, the Naval Safety Center, U.S. Coast Guard, USMC, and several helicopter wings. The principle focus of the working group was to analyze all helicopter operations functions. They used operational risk-management (ORM) to determine the optimum flight quarters' response based on two guidelines: safety and people.

The analysis was broken into three categories: fire fighting and crash and salvage operations; search and rescue, boat and deck operations; and aviation facility operations. In addition to fleet inputs, the group also reviewed procedures used by the Royal Navy, Canadian Navy, Royal Netherlands Navy and the U.S. Coast Guard. The conference identified significant flight operation functions and reviewed the fleet's suggestions for process improvements. Recommendations for station reductions were developed along two lines: specific process-improvement changes and technology-insertion changes.

The working group developed recommendations to reduce the "minimum" response using basic functional analysis and ORM. The following table compares current requirements and the possible watch-station savings that were recommended by the working group:

	Crash and salvage team	Boat and davit crew	Phone talkers (bridge, ic, ie, asstmate, fire party, background, asstmate, detm, r2)	ISO	LSF	FDD	Tiedown crew	HTO	Fuel Team	Rust	ASAC/AIRC/ASTAC	TOTAL
Original "minimum" requirements	17	12	7	AIR DET	1	1	2	1	5	1	1	48
Conference Recommended "minimums."	6	0 (Daily Muster)	0 (or as directed by the CO)	AIR DET	1	1	2	1	3	0	1	15

The "Team Concept"

Cooperative Engagement at its Best

Several months ago, those on board USS *Camden* (AOE 2) faced a

daunting challenge. The CNO docking-phased maintenance-availability (DPMA) was only a few months away. The challenges for the 15-week period were many. How could the ship's manpower and fiscal resources be maximized to complete the mountain of tasks in the Current

▼ *Camden* lived the "team concept" and fought hard over the 15 weeks to ensure success of "the plan." (USN)



Ship Maintenance Project (CSMP)? Additionally, how would the negative effects of a 90-minute one way commute from Bremerton, Wash., to Todd Pacific Shipyards in Seattle be minimized and a high quality of life for the crew be still maintained? The ship's crew needed a plan that went beyond the traditional ways of doing business.

"We had to be *innovative*. We had to *focus* our efforts on those tasks that had to be done. We had to *engage* the cooperative capabilities of area repair activities," said *Camden*'s Commanding Officer, CAPT D. A. Loewer. "And, in doing all this, we had to take care of our people." With that guidance, the ship's executive management team, composed of the ship's five most senior officers and the command master chief, began formulating "the plan."

The Plan, the Teams, the Shift-Work

The executive management team poured over the CSMP. They met with their individual departments and generated lists of tasks that needed to be completed. Soon there were lists of lists. However, instead of appearing overwhelming, two things became clear to the executive management team. One, there were items on those lists that were well beyond the ship's force capability to accomplish and two, in all of those lists there was a commonality of tasks that could be accomplished. With spaces to be painted, valves to be repaired, lagging to be replaced and vents to be cleaned throughout the ship, the answer to the captain's challenge was

becoming clear.

Innovation and focused effort would be key to our success.

The plan developed recommended a complete overhaul of the command structure. We disbanded the chain of command as we knew it and stood up a DPMA organization consisting of both production and support teams. The DPMA organization

was led by the first lieutenant—a senior lieutenant commander with a wealth of management skills. His primary assistants were the engineer officer (a lieutenant commander) and the assistant supply officer (a lieutenant).

Everyone on the ship, including the commanding officer and executive officer, was a member of a team. There were no exceptions. If we were going to make the plan work, we needed everyone's help. In all, 15 production teams and seven support teams were assembled.

Team size was based upon the number of approximate man-hours required to complete the assigned jobs. Each team also was assigned a minimum of two team leaders—one leader for each shift. For example, the valve team, led by an engineering chief warrant officer (CWO2) and two chief

by LTJG Chris Cooper and CAPT D. A. Loewer

petty officers (MMCs), was assigned 44 people for production over two shifts. The ventilation team, on the other hand, was led by a first-tour SWO junior officer and mustered only seven personnel.

Further, the ratings of those personnel assigned to each team was critical. A core of technically experienced personnel was needed to lead the less experienced team members. For example, assigning a seasoned damage controlman (DC2) as technical advisor to the door and hatch team; storekeepers (SK1 and SK2) to the valve team to assist in ordering parts and tracking inbound material; and a senior mess management specialist (MS1) to advise the barbecue team.

The workday was divided into two shifts. The first shift ran from 0705 until 1330 and the second shift from 1205 until 1830. Shift-work would provide a maximum 6 hour, 25 minute workday for all hands. When combined with the 90-minute one way commute from home to work site, the day was long enough. To minimize the negative effect of the commute on the crew, the transportation team ensured that all hands were expeditiously picked up from and delivered to the Washington State Ferry System terminals in Seattle, Fauntleroy and Bremerton.

Teamwork was to last only 10 and a half weeks. To enhance the crew's quality of life, the plan also established two, two-week leave periods during availability weeks six through nine. During that time, 50 percent of the crew could take leave at any one time. Once the teamwork portion of the availability was completed, the *entire ship* shifted its focus to damage-control training, equipment readiness and light-off assessment (LOA) preparations.

Focusing the production effort of each team for each shift over a 6 hour, 25 minute workday took not only energy, it took courage. Anything that would distract from the production effort was eliminated. This included eliminating officer's call, daily quarters and daily and weekly training. All equipment was put in lay-up (IEM). Even the CMS account was put on hold. No one was permitted to schedule any meeting that would disrupt production without the permission of the com-

manding officer. If a meeting was absolutely essential to the ship or crew, it would be held "off-shift." For example, both shipboard and petty officer indoctrination were conducted off-shift, and as a result, did not detract from production. Awards ceremonies and "all-hands meetings" were conducted during the shift overlap period and were not permitted to exceed 30 minutes. Strict control of all detractors was carefully maintained.

Initial Resistance and the Results

Initial resistance to the plan was overcome through a series of Captain's Calls before arriving in the shipyard. Many in the crew were unsure of the actual process. Some were unnerved that they might be asked to perform unfamiliar tasks. Others were concerned that using personnel in spaces with equipment with which they were unfamiliar, might lead to poor quality work and slow production. This turned out not to be the case.

"In the beginning, I was one of the biggest non-believers. I had been through the last overhaul on the ship, and I just didn't see that this would work. I didn't think we could get it together. But I was wrong," said Machinist's Mate Chief Auddie Collins of the stream/electrical team. "I can't believe how much we got done!"

"We had to go slow at first," said ENS Matt Eberhardt, lagging team leader. "Not many of us knew much about lagging anything, so we had to hold lots of training. The first two weeks were tough, but by week three, we looked like professional lagers."

To allow teams to assemble and organize quickly, teamwork began two weeks before the official start of the CNO availability. This gave the crew a chance to become familiar with the tools and the equipment and to get used to wearing the required personnel-protective equipment (PPE). But most important, it gave the crew time to adjust to the new shift-work routine.

"Modifying our command structure was pretty dramatic," said Command Master Chief NCCM(SW/AW) Jim Rickel. "I wanted to be sure that we brought about change gradually, especially for our younger Sailors. Another factor that speaks well of our commitment to the quality of life for

our families and crew is that through the first 10 weeks of the yard period, we maintained an eight-section duty and a five-day workweek. During week 11, we were able to shift to a 10-section duty and a four-day workweek with no loss in teamwork production or training."

When the teamwork phase of the plan was completed in the middle of week 11, the numbers were impressive: The 15 production teams had completed more than 70,000 man-hours of work. "Historically, during AOE yard periods, the ship averages about 19,000 man-hours of production work," said AOE Port Engineer Terry Mellon. "With the teams, *Camden* was able to more than triple that number. The dollar value of this contract was approximately \$15 million.

Had I had the contractor complete the production work and support the fire-watch requirements that the *Camden* crew did during their teamwork period, the contract would have had to be "plussed up" by more than \$2.74 million. Teamwork saved the government a lot of money."

While the total man-hours are daunting, the specific team numbers are telling as well. The valve team repaired, or replaced, more than 1,650 valves in 19 critical systems throughout the ship. The door and hatch team repaired 50 watertight doors and hatches and all 11 cargo doors. The vent team cleaned every piece of ventilation ducting and cooling and heating coil on board. The lagging, internal preservation and spray teams completed face-lifts on a total of 225 spaces.

The habitability team, with funding from the COMNAVSURFPAC Habitability Program, rebuilt from the deck plate up, a 107-person berthing compartment and three heads. They then used that experience and repaired all of the discrepancies in the ship's other head and berthing compartments. "Not only were we able to accomplish a lot, [we were able] to have fun building a berthing compartment from scratch with our bare hands," said Habitability Team Leader LTJG Robert Porter. "It gave us a real sense of pride to know that we built it."

Six of the seven support teams completed nearly 13,500 man-hours of effort, ensuring production teams were free to focus on specific task accomplishment. The seventh support team, fire watch, worked an additional 22,000 man-hours supporting ship-wide hot work requirements.

A *true innovation* of the team concept was the "barbecue team." Without a working galley and the shipyard cafeteria providing the only source for food, feeding the crew three meals a day appeared to be a true dilemma. Not for long, though. An enterprising SWO ensign proposed that a 5-person team, working with MWR, could support—for a fixed fee per meal—at least

► One of the quality of life items the ship did not have during the 15-week DPMA was a working galley. As a result, an enterprising SWO ensign proposed that a 5-person team, working with MWR, could support—for a fixed fee per meal—at least two meals per day for the crew through a daily barbecue. (USN)



two meals per day for the crew through a daily barbecue. The crew received COMRATS, the barbecue team changed the menu daily and weekly to provide a variety of food choices and, at the end of the availability, MWR garnered a substantial profit.

More numbers: 67 percent of the crew took leave during the designated leave periods. The light-off assessment was accomplished on time. Fires were lighted in the first two boilers, and steam testing was completed within the next five days.

Speaking with pride, LCDR Larry Holloway, the engineer officer and assistant DPMA coordinator, said, "There were those who said that it was impossible for us not to train for 10 weeks and pass the LOA on time. But we did it." He added, "My engineers are a

focused bunch, even when they are spread to the four winds on teams! Our secret was that we trained real hard prior to the yard. We had our training teams, ETT and DCTT, in place and ready, before we arrived at Todd."

► **The *Camden*'s innovations didn't hamper the quality of life for its Sailors, and in doing so, provided an example to the crews of other ships. (USN)**



The Lessons Learned

Some lessons were quickly learned; others took longer. However, changes to the processes were made throughout the CNO availability. Some of the lessons learned and changes that would be made to the plan for the next CNO availability are:

- Scrub your CSMP and ensure it contains meaningful work that you really want to accomplish!
- Ensure the COSAL is validated at least six to eight months before the availability. When you order needed parts against an APL, you'll get what you want and not what the system thinks you have.
- Meet with local repair organizations (RSG, SIMA, IMFAC) that will be helping you complete CSMP jobs three to four months before the availability. Decide which jobs can realistically be accomplished with cooperative and complementary efforts.
- Make your "list of lists" as early as possible.
- Decide early the composition of the DPMA organization. Stand up the organization at least two weeks before the availability begins.
- Order repair and replacement parts three to four months in advance of when they are needed. You will find it easy to outpace the availability of supplies.
- Assign a parts expeditor to the DPMA coordinator's staff to deconflict parts support, tools, and services requirements. Ensure a similar representative from the contract shipyard and the supervisor of shipbuilding are assigned.
- Ensure all—the contract shipyard, the supervisor of shipbuilding and port engineer—understand the scope of work you intend to undertake.
- Maximize communication among team and shift leaders to minimize rework and production losses.
- Establish a QA team of senior, knowledgeable and courageous personnel who have the authority to stop work when required and ensure overall quality in production
- Be aggressive, but realistic, when establishing your goals.

The Bottom Line

Camden lived the "team concept" and fought hard over the 15 weeks to ensure

In the end, it was **Camden**'s team concept that was key to maximizing fiscal and personnel resources, as well as ensuring the best quality of life possible for the crew during an arduous 15-week CNO DPMA.

success of "the plan." The sheer volume of work accomplished by both production and support teams, working in shifts, speaks loudly for the validity of this concept.

The team concept was indeed a voyage away from the standard routine. It encouraged innovative, independent thinking and a shift away from the way things always have been done. It forced us to focus and

prioritize. It placed junior officers and chief petty officers in leadership positions quite different from those to which they were accustomed. It broke down traditional stovepipes and provided cross training for every rating on the ship, throughout the ship. It provided increased family time.

There were many risks to the plan. Could we successfully coordinate the efforts of 22 autonomous teams for 10 and a half weeks? Would we have the parts' support we needed? Could we minimize rework and maximize QA? Would we have the time and ability to get all the systems that we had torn apart back together in time to train for LOA and light-off? Could our training teams reconstitute in time to pass LOA? The risks were many, but calculated, and very much worth taking.

In the end, it was our team concept that was key to maximizing our fiscal and personnel resources, as well as ensuring the best quality of life possible for our crew during an arduous 15-week CNO DPMA.

*Editor's note: LTJG Chris Cooper is LTJG Chris Cooper is an officer on board USS **Camden** (AOE 2) CAPT D. A. Loewer is **Camden**'s commanding officer.*

Bringing a Legacy to the New Millennium

The destroyermen serving in USS *Mahan* (DDG 72) have a unique responsibility. In addition to becoming an expert in his or her rating, each also must understand the legacy of the *Mahan* name and bear the responsibility of continuing the name's rich history.

Operations Specialist Master Chief (Surface Warfare) Gregory Greene, the ship's command master chief, is no exception. In fact, when he found out that he could serve on board *Mahan*, it was a defining moment in his naval career. "I jumped right on it," said Greene. "My very first ship when I came in 22 years ago was USS *Mahan* (DDG 42) and now I am serving in USS *Mahan* (DDG 72). I promised *Mahan*'s destroyermen that I will take care of them, and I promised the *Mahan* Association that I will continue to uphold the proud tradition of *Mahan* Sailors."

The first ship to bear the name *Mahan*, DD 102, was commissioned in 1918. Since then, a ship carrying the name has been in commission for 53 of 82 years.

DDG 72 is the fourth ship of the *Mahan* line, earning the distinction as "The Official Destroyer of the New Millennium."

Currently sailing in the Mediterranean Sea for her maiden deployment, *Mahan* serves as flagship for Commander, Destroyer Squadron 26. Because of the ship's communications suite and a permanently installed ship's signals exploitation space, the ship has one of the most comprehensive C4I systems in the USS Eisenhower (CVN) Battle Group. *Mahan* was the first DDG specifically configured to support an embarked commander. Internally, the Video Data-Distribution System allows 10 remote displays throughout the ship to broadcast

selected video data available to the watchstanders in the combat information center—anything from the large-screen display to live images downlinked from an SH-60B helicopter. This capability allows the embarked commander to monitor internal and external communications circuits from the comfort of his stateroom. This capability enhances his decision-making process, or "speed of command," because he can maintain a watch of his battlespace.

Externally, the ship's ability to share information with various warfare commanders via Link 16, SIPRNET, GCCS Zircon Chat, and the Commander's

were "skin-to-skin" hits. During their recent missile firings for Composite Training Unit Exercise, *Mahan* scored three successful intercepts and one skin-to-skin kill. A 1998 missile-firing exercise distinguished the ship as the first to achieve a kill on a Vandal without using the Aegis Auto Special Weapons Doctrine.

Mahan's warfighting capability will be an essential factor in the upcoming Mediterranean Fleet Battle Experiment "Golf." *Mahan*, along with three other ships, will test the Navy's newest protective features against theater ballistic missile threats.

The achievements of the ships in the *Mahan* lineage perfectly reflect the ideals of their namesake, Alfred Thayer *Mahan*, a forward-thinking naval philosopher

who is credited with helping convince Congress to rebuild the deteriorating U.S. fleet at the end of the 19th century. The construction marked the beginning of America's emergence as a global power. His thesis was that unrestricted commerce was essential for any nation to achieve

the status of a great power and that a strong global navy was necessary to protect that commerce and guarantee access to the world's oceans. His conclusion, derived from an examination of the preceding two centuries of history, has proven equally valid today.

*Editor's note: LTJG Salunga serves as the fire control officer for USS *Mahan* (DDG 72). Information for this article was contributed by CAPT Scotty Campbell (USN, Ret.), Ted Painter (VR, *Mahan* Association) and Anne Dunham-Fitzmaurice.*

Changes of Command

SURFLANT

COMDESRON ONE

CAPT Gary M. Erickson relieved
CAPT Barry L. Morgan

COMPHIBRON EIGHT

CAPT John A. Read relieved
CAPT Richard H. Enderly

USS *Arleigh Burke* (DDG 51)

CDR Alan E. Eschbach relieved
CDR Nevin P. Carr, Jr.

USS *Bataan* (LHD 5)

CAPT John B. Strott relieved
CAPT David C. Taylor

USS *Carr* (FFG 52)

CDR Darrel M. Morben relieved
CDR Michael W. Reedy

USS *Devastator* (MCM 6)

LCDR Clifford A. Pish relieved
CDR Thomas A. Flisk

USS *Hawes* (FFG 53)

CDR Jeffrey S. Jones relieved
CDR Charles B. Dixon

USS *Leyte Gulf* (CG 55)

CAPT William H. Dunn relieved
CAPT Raymond P. Donahue, Jr.

USS *Thomas S. Gates* (CG 51)

CDR James D. Bradford relieved
CDR Patrick E. Allen

USS *Vella Gulf* (CG 72)

CAPT Richard A. Feckler relieved
CAPT Brian G. Schires

USS *Whidbey Island* (LSD 41)

CDR Brian E. Barrington relieved
CDR Ray L. Clark, Jr.

SURFPAC

COMPHIBRON ONE

CAPT William E. Jezierski relieved
CAPT William F. Hopper

COMDESRON NINE

CAPT Joseph J. Natale relieved
CAPT John C. Meyer

USS *Germantown* (LSD 42)

CDR Eugene M. Abler relieved
CDR Joe H. Parker

USS *Kinkaid* (DD 965)

CDR Michael Fierro relieved
CDR Mike Woolley

USS *Lake Champlain* (CG 57)

CAPT Victor Guillory relieved
CAPT Paul T. Serfass

USS *Mount Vernon* (LSD 39)

CDR James A. Stewart relieved
CDR Maureen A. Farren

USS *Princeton* (CG 59)

CAPT Joseph A. Corsi relieved
CAPT John K. Ross

USS *Reuben James* (FFG 57)

CDR Carl W. Cramb relieved
CDR S. L. Richter

SITREP

Retired Admiral Elmo Russell (Bud) Zumwalt, Jr. Honored

President Bill Clinton represented the nation and Chief of Naval Operations Adm. Jay L. Johnson represented a half million men and women in bidding farewell to retired Adm. Elmo Russell Zumwalt Jr., who died January 2 at Duke University Hospital in Durham, N.C., from complications following chest surgery in October for malignant mesothelioma. "His love of the Navy was as deep as the oceans he sailed," said President Clinton, who called Zumwalt "the conscience of the Navy." Clinton said Zumwalt could always be counted on to do the right thing. "Midshipmen at the Academy learn honor, commitment and courage," Clinton said, "and all his life ADM Zumwalt exemplified those virtues—in World War II, in Korea and in Vietnam."

ADM Johnson spoke of Zumwalt's unwavering commitment to the Navy and how he helped change the character of the service. In the 1970s, when Zumwalt became CNO, the Navy needed a course change, ADM Johnson said. "Bud Zumwalt's boundless enthusiasm, tireless drive, bold courage, love for Sailors, and incredible sense of what needed to be done, brought the ship named Navy back into the channel," said Adm. Johnson.

The CNO praised Zumwalt for making the Navy a model of equal opportunity. ADM Johnson noted that Zumwalt had built a bond with his Sailors based on respect for their integrity and their abilities.

"It is perhaps his most lasting contribution, for it not only laid the foundation for today's volunteer Navy, it also committed the Navy's leadership to improving our Sailor's quality of life—and quality of service—a commitment that continues today," said ADM Johnson.

At 44, Zumwalt was the youngest ever officer promoted to rear admiral, and at 49, was the youngest four-star admiral to be appointed to the post of Chief of Naval Operations. As CNO,

he initiated wide-ranging reforms through his famous "Z-grams" and made Navy careers much more attractive.

After retiring from the Navy in 1974, Zumwalt remained dedicated to a life of service. He was a founder of the Marrow Foundation and a director of the National Marrow Donor Program. Active in the study of the effects of Agent Orange, he was also a director of the Vietnam Assistance to the Handicapped Foundation.

His caring for people in need and his help in outlawing chemical weapons led President Clinton to award him the Medal of Freedom, the nation's highest civilian honor.

"He gave us honest, caring and steadfast friendship," Clinton said. "He was one Sailor who never stopped fighting for his country and being its conscience."

Zumwalt was born in San Francisco in 1920 and grew up in Tulare, Calif. He was a distinguished graduate of the U.S. Naval Academy in 1942.

He served aboard destroyers in World War II, and after the surrender of Japan, he became the prize captain of a captured Japanese destroyer and sailed it to Shanghai. There he met and married the former Mouza Coutelais-du-Roche of Harbin, Manchuria.

Among his military decorations, he received the Distinguished Service Medal (three awards) and the Legion of Merit (two awards). He received the Bronze Star for valor during the battle of Leyte Gulf.

He was the author of two books. "On Watch" (1976) recounts his Navy career and warns Americans about the Soviet naval threat. "My Father, My Son" (1986) co-authored with his late son, Elmo III, is an account of their Vietnam experiences and the tragic illness and death of his son.

"Like thousands of other people in and around the Department of the Navy, I admire Bud Zumwalt," said the Honorable Richard Danzig, Secretary of the Navy. "I learned from him, and I am inspired by him.



▲ Members of the U.S. Navy Ceremonial Guard carry the casket of Retired CNO ADM Zumwalt from St. Andrew's Chapel after memorial services at the U.S. Naval Academy. (PH2 Tim Altevogt/USN)

The fact that he died changes none of this—perhaps it intensifies his impact.”

“After nearly a third of a century of distinguished service, Admiral Zumwalt was promoted over nearly thirty of his seniors to become Chief of Naval Operations in 1970,” continued the SECNAV. “As CNO he led with rare courage, energy and empathy to, above all, lighten the burdens and increase the rewards of naval service. At a time when racial hostility and discrimination particularly afflicted American society, he fought these problems with special ferocity in the Navy he loved so dearly.”

“Bud Zumwalt was a model for us all,” the SECNAV added. “What his son, Elmo, called his ‘burning torch of love’ for all those around him, and especially America’s Sailors, is reciprocated today by our love for him. We will miss him, but not forget him or what he stood for.”

Zumwalt is survived by his wife, Mouza Coutelais-du-Roche Zumwalt; one son, James; two daughters, Anne Zumwalt Coppola, and Mouzetta Zumwalt-Weathers; six grandchildren; a sister, Saralee Zumwalt Crowe; and a brother, James G. Zumwalt. The former CNO was laid to rest at the Naval Academy. He was 79.

—compiled from news reports

Integrated Power Systems, Electric Drive Selected for New Navy Destroyers (DD 21)

The Department of the Navy recently announced that the Land Attack Destroyer (DD 21) will be its first class of ships designed and built during the 21st century to be powered by electric drive featuring an integrated power architecture. The first of the DD 21-class of destroyers is expected to be in commission by the end of this decade.

Underscoring the importance of using integrated power technologies, Secretary of the Navy Richard Danzig said, “Changes in propulsion systems fundamentally change the character and power of our forces. This has been shown by the movement from sail to steam or from propeller to jet engines or to nuclear power. Electric drive will reduce the cost, noise and maintenance demands of how our ships are driven.” RADM Mike Mullen, director of the Navy’s Surface Warfare division, said damage control has profound warfighting implications and how electric drive technology will give that vessel a significant advantage. “If I take a hit, I will be able to instantly reroute power, reconfigure my ship, in a way that allows me to survive better and handle the damage in a way that allows me to continue to fight.”

“More importantly, electric drive, like other propulsion changes, will open immense opportunities for redesigning ship architecture, reducing manpower, improving shipboard life, reducing vulnerability and allocating a great deal more power to warfighting applications,” added RADM. Mullen.

Major benefits related to electric drive are derived in two areas, warfighting capability and quality of life for Sailors. In terms of warfighting, the technology represents significant increases in stealth capability

through signature reduction, and a large increase in available power that is seen as critical to future weapons systems that will be aboard Navy ships. Electric drive technology also represents great potential to improve the quality of life for embarked Sailors. It will free up large amounts of internal space, leaving room for significant habitability improvements. “We now have the capability to give staterooms to enlisted Sailors,” added Secretary Danzig. “When we have staterooms for Sailors, and reduced numbers also, we have changed the character of life in the Navy; we have changed the character of the experience, what it means to be on board a ship.”

The key design element of integrated power and electric drive is a single source generator for the requirements of all ship’s power needs, including propulsion. The Department of the Navy decision to team DD 21 with electric drive for its propulsion comes after careful consideration among several possibilities studied by the two contractor teams involved.

“This is a long sought and much desired goal,” added Secretary Danzig. “DD 21 will truly be the first ‘Smart Ship’ built from the keel up. Electric drive technology is integral to that. The warfighting and quality of life benefits that can be derived from this will mean that our Sailors can walk aboard a ship that is unlike any other they have known... this shift in propulsion reflects our wider efforts to change the very culture of the Navy. With DD 21, Sailors will live, work, and fight aboard a ship that values them like never before.”

—Office of Secretary of Defense
Public Affairs

New Educational Initiatives for Sailors

The Navy College Program, formerly known as Navy Campus Education Centers, is expanding educational opportunities for Sailors and Marines, whether it be to finish their high school education, improve basic academic skills, work on a technical or occupational certificate, or earn a college degree.

Under the Navy College Program plan, offices will get more personnel and improved facilities, including workstations and Internet connectivity. Additional counselors also are being added to the Navy College Office staffs to provide even greater access to educational advisement. To further augment accessibility to information about voluntary education, the Navy opened the Navy College Center, which provides worldwide access through WEB-based e-mail and telephone advice. The Navy College Center, located at Saufley Field in Pensacola, Fla., is accessible 24 hours a day on the Internet via the Navy College Program web site at www.navycollege.navy.mil. The center was developed to provide Sailors easy access and "one-stop shopping" for information on the Navy College Program and ongoing voluntary education programs. It's an automated counseling center, staffed by professional academic advisors, and open seven days a week from 0700-2200 EST. Sailors can interface with advisers via a toll-free number (1-877-253-7122/DSN 922-1828). They can also e-mail the center with questions and expect a fast reply. Email address is ncc@smtp.cnet.navy.mil.

Under the Navy College Program (NCP) individual Sailor/Marine American Council on Education Registry Transcripts (SMARTs) are now available to every member of the Navy and Marine Corps on the Internet via the Navy College Program Web site. It has never been easier for Sailors and Marines to obtain a copy of their individual SMART to see what college credits their Navy training has earned them. Previously, they had to request copies from local Navy College Offices or from the Navy College Center via e-mail or by phone.

"The SMART access page is located on the Navy College Program Web site at www.navycollege.navy.mil," said Dr. Jeff Cropsey, Director of the Voluntary Education Department at the Naval Education and Training Professional Development and Technology Center.

"When one accesses the Navy College Program Web site, he or she will see simple instructions to follow in order to access his or her individual SMART."

The SMART documents recommend college credit for a Sailor's military training and occupational experience. Provided with the SMART is information on any DANTES tests taken for college credit (e.g. College Level Examination Program (CLEP)), and a list of Navy funded college courses taken while on active duty.

Sailors and Marines may obtain their individual unofficial SMART via the NCP Web site using the following procedures:

- go to the Navy College Program Web site at www.navycollege.navy.mil
- click on "here" to get your SMART.
- click on "Sign into SMART as an individual."

You will now be on the page to enter your SSN and password. If you have never requested a SMART, enter SSN only. The system will bring up another screen for first time users, to enter additional personal information. You will need your pay entry base date, located on your leave and earning statement (LES) to access your transcript.

While SMART is now available online, Sailors and Marines may still request copies from the Navy College Center by calling 1-877-253-7122/DSN 922-1828, via e-mail at ncc@smtp.cnet.navy.mil or by visiting their local Navy College Office. Sailors' official SMART transcript can be sent directly to an academic institution of their choice, and must be requested from the Navy College Center or by visiting their local Navy College Office.

Another educational initiative is "rating roadmaps" that have been developed for every Navy rating, showing ACE recommended credit for Navy training and rating-specific work experience. As the enlisted initial training courses over 45 hours are evaluated, the roadmaps will be updated to indicate appropriate credit recommendations. Rating Roadmaps are available on the NCP web site.

Effective last October, 89 percent of enlisted initial skills and 36 percent of enlisted follow-on training over 45 hours had been evaluated by the American Council on Education (ACE) for recommended college credit. The plan is to have 100 percent of enlisted initial skills

and 76 percent of enlisted follow-on training evaluated by September 30.

Under the Navy College Program for Afloat College Education (NCPACE) Sailors can get fully funded instruction in both undergraduate and graduate courses from regionally accredited colleges and universities. All Sailors need to pay for are their books. Courses aboard ship are taught through computer or video teleconferencing as well as traditional classroom instruction. All undergraduate courses are from institutions with Servicemember's Opportunity College-Navy (SOCNAV) affiliation, so Sailors can transfer credit and complete degrees.

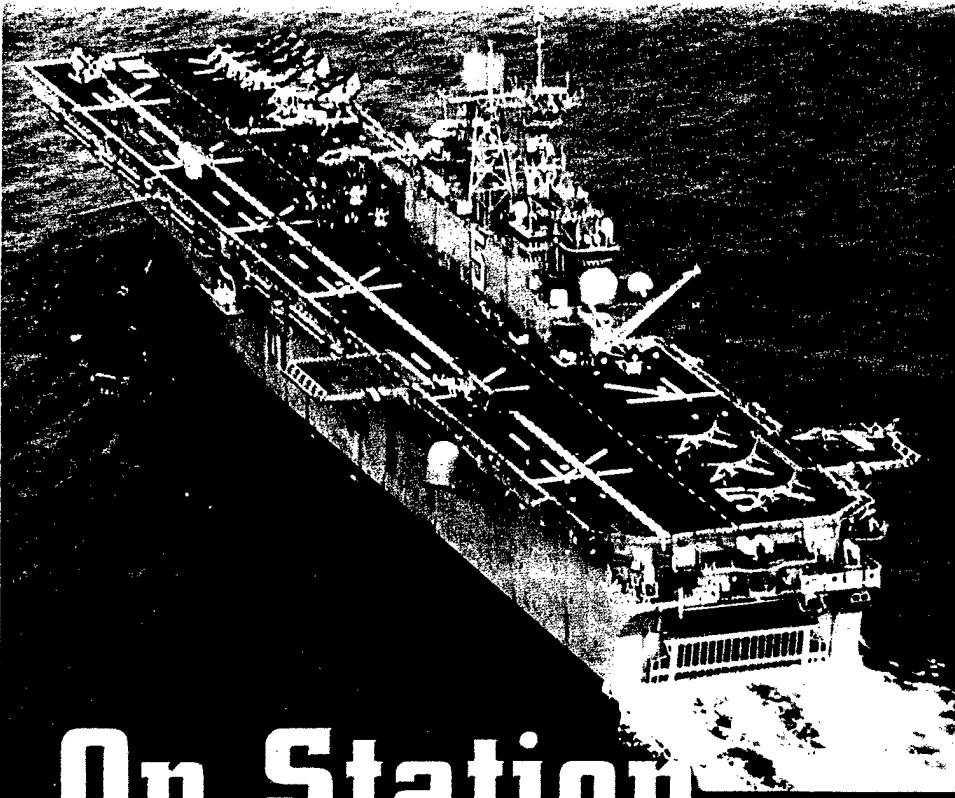
Using Servicemembers Opportunity Colleges Navy (SOCNAV) as the vehicle, the Navy will form additional partnerships with educational institutions to provide degrees that will accept and apply the maximum number of American Council on Education recommended credit for Naval training and experience. New education partnership agreements will ensure greater transferability of credits to support the mobile enlisted force. The new education partners will develop degree roadmaps to allow Sailors to easily see how their credit earned from Navy training and work experience, off-duty education, and credit-by-examination apply to a specific degree program.

The Navy College Learning Center and Navy College Learning Program not only provide Sailors instruction in English, reading and math to help them complete high school and improve their success in college programs, but also in preparation for taking tests for college credit by examination and entrance exams such as the SAT and GRE through the DANTES program.

One aspect of voluntary education that hasn't changed is the 75 percent (up to \$187.50 per credit hour and \$3,500 per year maximum,) the Navy funds for courses needed to complete a degree or certificate. Finally, the Defense Activity for Non-Traditional Education Support (DANTES) will continue to provide credit by examination tests and a catalog of schools offering distance learning programs available with tuition assistance.

To learn more about the program designed to "educate the Sailor of the 21st century," visit the Navy College Program Web site at www.navycollege.navy.mil or call 1-877-253-7122, DSN 922-1828.

—CNET Public Affairs



◀ **USS Bataan** (LHD 5) (PH3 Chris Ttaten/USN)

On Station

USACOM/2nd Fleet

USS *Dwight D. Eisenhower* (CVN 69)
USS *Anzio* (CG 68)
USS *Cape Saint George* (CG 71)
USS *Lafoon* (DDG 58)
USS *Mahan* (DDG 72)
USS *Samuel B. Roberts* (FFG 58)
USS *Kaufman* (FFG 59)
USS *Wasp* (LHD 1)
USS *Trenton* (LPD 14)
USS *Oak Hill* (LSD 51)

USEUCOM/6th Fleet

USS *McFaul* (DDG 74)
USS *Carney* (DDG 64)
USS *John Hancock* (DD 981)
USS *Spruance* (DD 963)
USS *Underwood* (FFG 36)
USS *Bataan* (LHD 5)
USS *Shreveport* (LPD 12)
USS *Whidbey Island* (LSD 41)
USS *Emory S. Land* (AS 39)

USCENTCOM/5th Fleet

USS *John F. Kennedy* (CV 67)
USS *Monterey* (CG 61)
USS *The Sullivans* (DDG 68)
USS *Taylor* (FFG 50)
USS *John S. McCain* (DDG 56)
USS *Cushing* (DD 985)
USS *Gary* (FFG 51)
USS *John C. Stennis* (CVN 74)
USS *Port Royal* (CG 73)
USS *Lake Champlain* (CG 57)
USS *Russell* (DDG 59)
USS *Elliot* (DD 967)
USS *Rentz* (FFG 46)
USS *Ardent* (MCM 12)
USS *Dextrous* (MCM 13)
USS *Seattle* (AOE 3)
USS *Bridge* (AOE 10)

USPACOM/7th Fleet

USS *Kitty Hawk* (CV 63)
USS *Chancellorsville* (CG 62)
USS *Mobile Bay* (CG 53)
USS *Vincennes* (CG 49)
USS *Curtis Wilbur* (DDG 54)
USS *O'Brien* (DD 975)
USS *Vandegrift* (FFG 48)
USS *John Paul Jones* (DDG 53)
USS *John Young* (DD 973)
USS *Ford* (FFG 54)
USS *Decatur* (DDG 73)
USS *Belleau Wood* (LHA 3)
USS *Juneau* (LPD 10)
USS *Germantown* (LSD 42)
USS *Fort McHenry* (LSD 43)
USS *Denver* (LPD 9)
USS *Pearl Harbor* (LSD 52)
USS *Bon Homme Richard* (LHD 6)
USS *Blue Ridge* (LCC 19)
USS *Guardian* (MCM 5)
USS *Patriot* (MCM 7)
USS *Safeguard* (ARS 50)

USSOUTHCOM

USS *Doyle* (FFG 39)
USS *John L. Hall* (FFG 32)

